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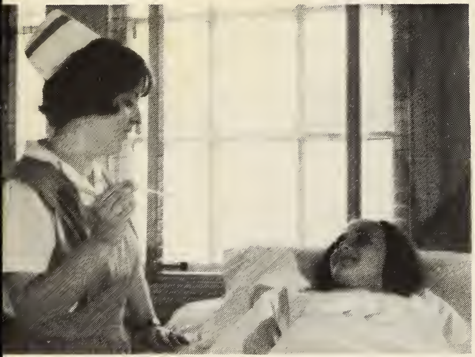

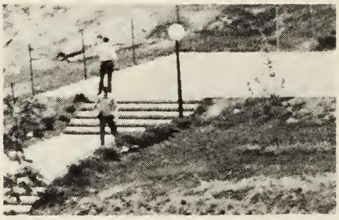

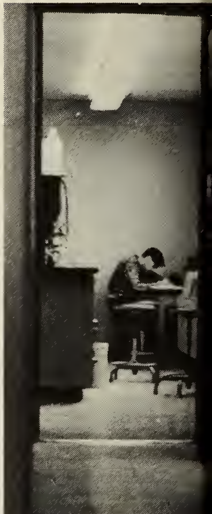

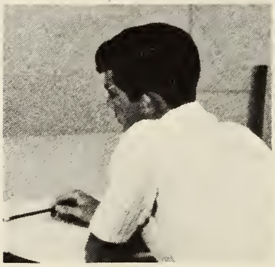

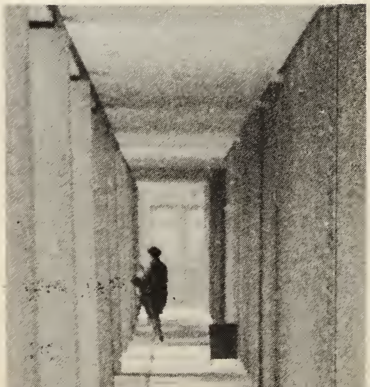

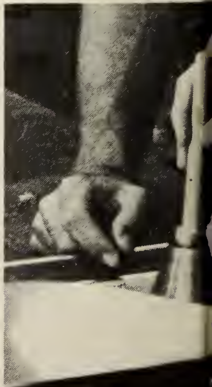

CENTRAL PIEDMONT COMMUNITY COLLEGE

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GENERAL CATALOG

Volume IV July 1968

Announcements For 1968-69

CHARLOTTE, NORTH CAROLINA

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PART ONE

COLLEGE ORGANIZATION

I. BOARD OF TRUSTEES

EDGAR A. TERRELL, JR., *Chairman*
EMIL J. KRATT, *Vice Chairman*
DR. RICHARD H. HAGEMEYER, *Secretary*

Appointed by The Governor

	Expiration of Term
MRS. HENRY E. FISHER	JUNE 30, 1973
ALAN T. DICKSON	JUNE 30, 1971
JOHN R. MILLIKEN	JUNE 30, 1975
G. A. RUDISILL	JUNE 30, 1969

Appointed by The Mecklenburg County Board of Commissioners

	Expiration of Term
DR. SPENCER E. DURANTE	JUNE 30, 1975
J. EMMETT SEBRELL	JUNE 30, 1971
J. D. SLOAN	JUNE 30, 1973
ROBERT L. TAYLOR	JUNE 30, 1969

Appointed by The Charlotte-Mecklenburg Board of Education

	Expiration of Term
DR. E. L. RANN	JUNE 30, 1975
EMIL J. KRATT	JUNE 30, 1969
DR. WILLIAM C. SELF	JUNE 30, 1973
EDGAR A. TERRELL, JR.	JUNE 30, 1971

II. ADMINISTRATIVE STAFF

RICHARD H. HAGEMEYER, *President*
B.S., 1939 (Bowling Green University); M.A., 1951 (University of Michigan); Ed.D., 1961 (Wayne State University).

NOAH GAYLE SIMMONS, *Vice President*
B.S., 1948 (Southeast Missouri State College); M.A., 1951, Ed.D., 1960 (Washington University); post-doctoral study at Michigan State University.

DEAN BRADY DAVIS, *Dean, Career Programs*
B.Ed., 1941 (Eastern Illinois Teachers College); M.S., 1950 (North Carolina State University at Raleigh); additional work at Rutgers University.

DONALD LEE HARBERT, *Dean, Career Programs*
B.S., 1958 (Eastern Illinois University); M.A., 1960 (Ball State University); Ed.S., 1967, Ed.D., 1968 (University of Florida).

JAMES ALEXANDER KISER, JR., *Dean, Student Services*
A.B., 1952 (Lenoir Rhyne College); M.Ed., 1953 (University of North Carolina at Chapel Hill); additional graduate work at North Carolina State University at Raleigh; Ed.D. candidate (University of California at Berkley).

OTTO A. LOCKEE, *Dean, Extension*
B.S., 1951, M.Ed., 1951 (Texas Christian University); Registered Professional Engineer.

JOHN LEVI SAUDER, *Dean, General Adult Education*
B.S., 1936 (Pennsylvania State College at Millersville); M.A., 1947 (University of Virginia); completed doctoral course requirements at University of Virginia; additional graduate work at North Carolina State University at Raleigh.

VAUD A. TRAVIS, JR., *Dean, Liberal Arts and Business*
B.S., 1947 (Northeastern State College); M.S., 1948, Ed.D., 1966 (Oklahoma State University).

ROBERT GILMAN HOELZEL, *Comptroller*
A.B., 1950 (Harvard); graduate work at University of Michigan.

E. WORTH CAMPBELL, JR., *Administrative Assistant*
B.S., 1953 (Appalachian State University); M.Ed., 1958 (University of North Carolina at Chapel Hill); additional graduate work at North Carolina State University at Raleigh, and Converse College.

JAMES HAROLD WILLIAMS, *Assistant Dean of Students*
A.B., 1934 (University of North Carolina at Chapel Hill); M.A., 1953 (Appalachian State University); additional graduate work at University of North Carolina at Chapel Hill.

J. WALTER CURLEE, *Manager, Bookstore*
B.S., 1949 (University of North Carolina at Chapel Hill).

III. FACULTY

JAMES FRANKLIN ALEXANDER, *Counselor*
B.S., 1951 (Johnson C. Smith University); M.S., 1963 (Agricultural and Technical College of North Carolina).

EVELYN B. ARRINGTON, *Laboratory Assistant, Programmed Materials Laboratory*
A.A., 1967 (Central Piedmont Community College); undergraduate work at University of North Carolina at Charlotte.

PAUL D. ATWELL, *English*
B.A., 1958 (High Point College); M.A., 1964 (Duke University).

SHIRLEY BAPTISTE, *Practical Nursing*
Diploma, 1954 (St. Francis School of Nursing); B.S., 1966 (Queens College).

MYRA ADELAIDE BARRON, *History*
A.B., 1930 (Winthrop College); M.A., 1951 (Peabody College); additional graduate work at Clemson University and Appalachian State University.

JOSEPH T. BARWICK, *English*
B.S., 1967, M.A.T., 1968 (University of North Carolina at Chapel Hill).

ANNE S. BIVENS, *Associate Degree Nursing*
Diploma, 1955 (Presbyterian Hospital School of Nursing); B.S., 1957 (Queens College).

HOYLE LEE BLALOCK, JR., *Electronic Data Processing*
B.S., 1961, M.Ed., 1966 (North Carolina State University at Raleigh); Professional Certificate in Data Processing.

HAZEL H. BLEVINS, *Associate Degree Nursing*
Diploma, 1931 (St. Leo's Hospital School of Nursing); Certificate in Public Health Nursing. 1947 (University of Minnesota); B.S., P.H.N., 1952 (University of North Carolina at Chapel Hill); additional work in psychiatric nursing at Duke University, Columbia University and Rutgers University.

JOHN GRAHAM BRADLEY, *Machine Tools Laboratory*
B.S., 1967 (University of North Carolina at Charlotte).

THOMAS G. BRADY, JR., *Programmed Materials Laboratory*
A.B., 1963 (Elon College); graduate work at North Carolina State University at Raleigh.

ERNEST LOUIS BROWN, *Business Administration*
Ch.E., 1943 (University of Cincinnati); M.B.A., 1954 (University of Chicago).

ROLLA GENE BRYANT, *Music*
B.M., 1950 (Central Methodist College); M.Ed., 1957 (University of Missouri); additional graduate work at University of Illinois.

HERBERT BURNS, *Accounting*
B.S., 1964, M.A., 1967 (Appalachian State University).

RAY VON CALDWELL, *Biology*
A.B., 1953 (Lenoir Rhyne College); M.Ed., 1959 (University of North Carolina at Chapel Hill); additional graduate work at Converse College.

JEAN L. CAMPBELL, *Registered Nursing*
B.S., 1954, M.N., 1965 (Emory University).

LEMUEL HOOKER CANNON, JR., *Drafting and Design Technology*
B.M.E., 1947 (North Carolina State University at Raleigh); Registered Professional Engineer.

JANE LINDSAY CARRIKER, *Practical Nursing*
Diploma, 1942 (Montreat Junior College); Diploma, 1945 (Presbyterian Hospital School of Nursing); additional work at North Carolina State University at Raleigh and University of North Carolina at Chapel Hill.

WILLIAM EDWARD CHEEK, *Chemistry*
B.S., 1953, M.A., 1957 (Appalachian State University); M.A., 1962 (George Peabody College); additional graduate work at University of North Carolina at Chapel Hill, Michigan State, Duke University, Vanderbilt University and Kansas State University.

NANCY CAROLYN CHESHIRE, *Associate Degree Nursing*
B.S.N., 1959 (Duke University); M.S., 1963 (University of Maryland).

THOMAS E. CHESHIRE, *Psychology*
B.A., 1967 (North Carolina Wesleyan College); M.A., 1968 (Appalachian State University).

JAMES A. COTTRELL, *Business Administration*
B.S., 1967, M.S., 1968 (Appalachian State University).

J. LEON COULTER, *Social Science*
A.B., 1952, M.A., 1953 (Appalachian State University); Ed.D., 1960 (Florida State University).

PATSY DENNIS CRADDOCK, *Associate Degree Nursing*
Diploma, 1956 (Presbyterian Hospital School of Nursing); B.S., 1958 (Queens College).

LINDA CAROL CRAVEN, *English*
A.B., 1964 (High Point College); M.A., 1966 (Wake Forest College).

RUBY FOSTER CROSIER, *Accounting*
Secretarial Science Certificate, 1937 (Elon College); B.S., Business Administration, 1940 (Catawba College); graduate work at University of North Carolina at Chapel Hill and University of North Carolina at Greensboro.

LOIS W. DIXON, *Business Administration*
B.S., 1962 (Pfeiffer College); M.Ed., 1967 (University of North Carolina at Chapel Hill).

LEWIS FISHER DRUM, *Chemistry*
B.S., 1938 (Lenoir Rhyne College); B.Ch.E., 1939, M.S., 1941 (North Carolina State University at Raleigh); additional graduate work at Appalachian State University and North Carolina State University at Raleigh.

MARION F. DURHAM, *Counselor*
A.B., 1935 (University of North Carolina at Greensboro); M.Ed., 1953 (University of North Carolina at Chapel Hill).

CONSTELLA B. ELLIS, *Laboratory Assistant, Biology*
Diploma, 1968 (Central Piedmont Community College).

BERNARD ENGEL, *Extension*
B.S., 1959 (New York University).

ALOIS GEORGE FARKAS, *Civil Engineering Technology*
B.S.C.E., 1948, M.S.C.E., 1959 (Washington University); additional graduate work at Duke University and North Carolina State University at Raleigh; Registered Professional Engineer.

BERNICE POOLE FULSON, *Practical Nursing*
Diploma, 1952 (Kale Bitting Reynolds Memorial Hospital); B.S., 1964 (Queens College).

ROBERT CURTIS FUSSELL, JR., *Electrical and Electronics Technology*
B.S., 1968 (Valparaiso Technical Institute).

LOUISE M. GANT, *Business Administration*
B.A., 1965 (University of North Carolina at Chapel Hill); additional graduate work at University of North Carolina at Chapel Hill.

ELEANOR WILLOUGHBY GARRETT, *Secretarial Curricula*
A.B., 1937 (Bowling Green College of Commerce); graduate work at University of Kentucky and University of North Carolina at Chapel Hill.

DOROTHY GOVE GLOVER, *Practical Nursing*
Diploma, 1941 (Mercy College of Nursing); additional undergraduate work at University of Michigan, University of Georgia, and North Carolina State University at Raleigh.

ROBERT LYLE GOSSETT, *Anatomy and Physiology*
B.S., 1950 (University of Dayton); M.S., 1968 (University of North Carolina at Chapel Hill); Certificate in Physical Therapy (Cleveland Clinic).

HAROLD EDWARD GREENE, *Laboratory Assistant, Automotive Body Repair*
Diploma, 1967 (Central Piedmont Community College).

THOMAS EDWARD GRIFFIN, *Coordinator of Programmed Materials Laboratory*
B.S., 1952 (Western Carolina University); M.A., 1964 (Appalachian State University); additional graduate work at University of North Carolina at Chapel Hill.

RONALD CORBIN GYLES, *Electrical and Electronics Technology*
B.E.E., 1943, B.S., 1950, M.I.A., 1956 (North Carolina State University at Raleigh); Registered Professional Engineer.

JULIAN W. HABERCAM, *Dental Hygiene*
D.D.S., 1938 (University of Maryland).

G. MITCHELL HAGLER, JR., *English*
B.S., 1960 (Appalachian State University); M.A., 1965 (George Peabody College).

JAMES E. HALL, *Biology*
B.S., 1966, M.A., 1968 (Appalachian State University).

STEPHEN B. HARKEY, *Laboratory Assistant, Electronic Data Processing*
A.A., 1967 (Central Piedmont Community College).

HASKELL E. HARRILL, *Air-Conditioning and Refrigeration*
Diploma, 1936 (Coyne Electrical School).

JAMES WATT HARTER, *Psychology*
B.S., 1955 (University of South Carolina); M.A., 1963 (Appalachian State University); additional graduate work at North Texas State University.

GAYLE MELTON HARTLEY, *English*
A.B., 1960, M.Ed., 1962 (University of North Carolina at Chapel Hill); additional graduate work at University of South Carolina.

HELEN HARTMAN, *Registrar*

EARL HASSETT, *Accounting*
L.L.B., 1951 (DePaul University); M.A., 1960 (Rockford College).

WILLMORE BROWNING HASTINGS, *Speech*
B.S., 1932 (University of Illinois); M.A., 1961 (Southern Illinois University).

JACK K. HAWKINS, *Business Administration*
B.S., 1967, M.B.A., 1968 (Murray State University).

LINDA HEATH, *Electronic Data Processing*
B.S., 1963 (University of North Carolina at Greensboro).

JANE ELLIOTT HEEDICK, *Practical Nursing*
Diploma, 1943 (Presbyterian Hospital School of Nursing); additional work at North Carolina State University at Raleigh and Queens College.

JAMES MARTIN HESSER, *Counselor*
A.B., 1931, B.M., 1932 (Ohio Wesleyan University); M.A., 1938 (New York University); additional graduate work at University of Pittsburg and New York University.

ROSEMARY HESTER, *Business Education*
B.A., 1941 (William Jewell College).

BARBARA K. HODGE, *Associate Degree Nursing*
Diploma, 1951 (Presbyterian Hospital School of Nursing); B.S., 1953 (Greenville College); additional undergraduate work at University of North Carolina at Chapel Hill.

BETTE BRAY HOLMES, *Dental Assisting*
C.D.A., 1963 (American Dental Assistant Association); undergraduate work at William and Mary College and Oklahoma A & M.

MITZI C. HOLTON, *Associate Degree Nursing*
Diploma, 1956 (Presbyterian Hospital School of Nursing); B.S., 1958 (Queens College).

B. FORNEY HUFFMAN, *Traffic and Transportation*
B.S., 1956 (University of Tennessee).

ORON W. HUNEYCUTT, *Automotive Mechanics*
Diploma, 1966 (Central Piedmont Community College).

CLAUD CALDWELL HUNTER, *Automotive Mechanics*
Undergraduate work at North Carolina State University at Raleigh.

DAVID LEE HUNTER, *Mathematics*
B.S., 1957 (Johnson C. Smith University); M.S., 1965 (Atlanta University); additional graduate study at Rutgers University and North Carolina State University at Raleigh.

MAGALY JANE', *Spanish*
B.S., 1962 (University of Tampa); M.A., 1968 (Appalachian State University).

MERIAM JARVIS, *Laboratory Assistant, Programmed Materials Laboratory*
Central Piedmont Community College.

DORA T. JOHNSON, *Secretarial Curricula*
B.S., 1957 (Agricultural and Technical College of North Carolina); M.A., 1960 (Columbia University); additional graduate work at University of North Carolina at Greensboro.

JAMES B. JONES, *Mathematics*
B.A., 1963 (Lenoir Rhyne College); M.A., 1965 (University of South Carolina); additional graduate work at Florida State University.

ROBERT A. KETTEL, *Criminology*
B.A., 1963 (University of Chattanooga); M.S., 1966 (Florida State University).

A. VICTOR KIRKMAN, *Counselor*
B.S., 1955 (Wake Forest College); M.A., 1964 (Appalachian State University).

JESSIE PROPST KISER, *Director, Nursing Curricula*
B.S.N.E., 1957 (Duke University); M.S.N., 1962 (University of North Carolina at Chapel Hill).

HELEN KISER, *Dental Research Project*
Diploma, 1953 (Mercy School of Nursing).

PATSY W. LACEY, *Sociology*
B.A., 1957 (Northeast Louisiana State College); M.A., 1964 (Louisiana State University).

MARILYN J. LASH, *Commercial Art*
B.F.A., 1951 (University of Nebraska); M.A., 1964 (Michigan State University).

BYRON W. LATHAM, *Applied Mathematics and Science*
B.S., 1935, M.A., 1953 (Appalachian State University).

LAURA STRUNK LESLIE, *English*
A.B., 1929 (Florida State College for Women); M.A., 1949 (Florida State University); additional graduate work at Florida State University.

MARVIN H. LEVINE, *Commercial Art and Advertising Design*
B.F.A., 1951 (Syracuse University); M.Ed., 1966 (The College of William and Mary); additional graduate work at New York State College for Teachers at Buffalo and Syracuse University.

AIMEE SCHULTZ LOSSE, *Mathematics*
A.B., 1940 (University of Wisconsin); M.A., 1967 (Kansas State College of Pittsburg); additional graduate work at Kansas State College of Pittsburg.

CHRISTINE O. LUSK, *Dental Hygiene*
Certificate in Dental Hygiene, 1962, B.S., 1963 (University of North Carolina at Chapel Hill).

JOHN A. McALEXANDER, *Physics*
B.S., 1961 (Appalachian State University); M.A.T., 1965 (University of North Carolina at Chapel Hill).

*WILLIAM ALEXANDER McINTOSH, *Electronic Data Processing*
A.B., 1960 (Elon College); M.S., 1964, Ph.D. candidate (North Carolina State University at Raleigh).

GARY E. MALTERER, *Business Administration and Electronic Data Processing*
B.A., 1965 (Rollins College); M.B.A., 1967 (Crummer School of Finance and Business Administration).

**Official leave of absence.*

CARLTON W. MASON, *Business Administration*
B.S., 1961 (Middle Tennessee State University); M.A., 1967 (Appalachian State University).

RAYMOND VIA MASON, *Automotive Body Repair*
Undergraduate work at North Carolina State University at Raleigh.

VIRGINIA B. MATHIS, *English*
B.A., 1936 (Winthrop College); M.A., 1942 (Duke University); additional work at Columbia University, Florida State University and Harvard University.

PHILIP B. MAULDIN, *Sociology*
A.B., 1960 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).

MANUEL MATTHEW MENSER, *Welding*
Undergraduate work at North Carolina State University at Raleigh.

ARTHUR MEYER, *Biology*
B.S., 1929 (Oklahoma State University); M.S., 1930 (Kansas State University); Ph.D. candidate (University of Tennessee).

CHARLES THERMAN MILAM, *Air-Conditioning and Refrigeration*
Undergraduate work at North Carolina State University at Raleigh.

LOUISE PARSONS MILLS, *Counselor*
B.S., 1956 (Oklahoma State University); M.A., 1963 (Oklahoma State University).

ALLISON D. MONROE, *Electronic Data Processing*
B.S., 1966, M.S., 1968 (North Carolina State University at Raleigh).

CLINTON PRICE MOODY, *Commercial Art and Advertising Design*
B.S., 1953 (Livingston State College); M.Ed., 1959 (University of South Carolina).

JUANITA OWEN MORRIS, *Associate Degree Nursing*
Diploma, 1940 (Mercy College of Nursing); Diploma, 1942 (Vanderbilt University Hospital Anesthesia School); B.S., 1949 (Queens College).

MILDRED W. MORRISON, *Librarian*
A.B., 1938 (Hollins College); B.L.S., 1939 (Pratt Institute); additional work at University of North Carolina at Chapel Hill, Queens College and Appalachian State University.

JOHN DEAL MORROW, *Physics*
B.S., 1957 (East Carolina University); M.S., 1967 (University of Tennessee); additional graduate work at North Carolina State University at Raleigh, Appalachian State University and Oak Ridge Institute of Nuclear Studies.

ROBERT A. MORROW, JR., *Mathematics*
B.S., 1959, M.S., 1961 (North Carolina State University at Raleigh).

JOHN A. NEEDY, JR., *Health and Physical Education*
B.S., 1940 (Ohio Northern University); M.A., 1947 (Columbia University); additional graduate work at Indiana University.

JOHN A. NELSON, *Automotive Mechanics*
B.S., 1964 (Stout State College).

JON C. NIXON, *Biology*
B.S., 1966 (Lenoir Rhyne College); M.A., 1967 (Appalachian State University).

ROBERT STANLEY O'DELL, *Drafting and Design Technology*
B.S., 1951, M.A., 1959 (East Tennessee State University); additional graduate work at University of North Carolina at Chapel Hill and North Carolina State University at Raleigh.

PHOEBE OPLINGER, *Head Librarian*
A.B., 1946 (Maryville College); M.S.L.S., 1959 (Drexel Institute of Technology).

R. MEADE OWENS, *Business Administration*
B.S., 1925 (Harvard University); M.B.A., 1934 (Harvard University).

LOIS PARTON, *Secretarial Curricula*
B.S., 1965, M.S., 1968 (Appalachian State University).

MARY A. POOLE, *English*
B.A., 1960 (Queens College); M.A.T., 1965 (University of North Carolina at Chapel Hill); additional graduate work at University of North Carolina at Charlotte and Winthrop College.

JULIAN W. PYLES, *Mathematics*
B.A., 1950 (Fisk University); M.A., 1954 (University of Michigan); additional graduate work at Carnegie Institute of Technology, Union College and Oberlin College.

ANNETTE M. RANDALL, *English*
A.B., 1967 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).

ROBERT J. RANDLE, *Business Administration*
B.S., 1955 (University of Omaha); M.Litt., 1958 (University of Pittsburgh); additional graduate work at American University, Middle Tennessee State University, Vanderbilt University.

KARL WILLIAM REBER, *Metallurgy*
B.Ch.E., 1947 (University of Detroit); M.S.E., 1951 (University of Florida); additional graduate work at University of Tennessee and North Carolina State University at Raleigh.

PERRY A. RIVKIND, *Director, Police Science - Criminology*
B.S., 1965 (Florida State University); M.Ed., 1966 (Florida Atlantic University).

NANCY C. ROUZER, *History*
B.A., (Duke University); M.A.T., 1964 (Winthrop College); additional graduate work at Winthrop College.

JAMES HOWARD SASSER, *History, Economics*
A.B., 1959 (High Point College); M.A., 1960 (George Peabody College for Teachers); additional graduate work at University of North Carolina at Chapel Hill, Western Carolina University and George Peabody College for Teachers.

JOYCE ELIZABETH SIGMON, *Dental Assisting*
Diploma, 1953 (King's College); undergraduate work at East Carolina University and Central Piedmont Community College; Certified Dental Assistant.

BRUCE H. SMITH, *Business Administration*
B.A., 1957 (Lenoir Rhyne College); M.B.A., 1964 (Auburn University); Certificate in Municipal Administration.

HARRY SNYDER, *Director, Dental Curricula*
D.D.S., 1934 (Washington University); Certificate in Dental Research and Prosthesis, 1952 (New York University).

GEORGE JOHN SOOS, *Manufacturing Engineering Technology*
B.S.E., 1944 (Hungarian Royal Technical Military Academy); Registered Professional Engineer.

SIDNEY T. STOVALL, *English*
A.B., 1939 (Duke University); M.A., 1941 (University of Michigan); M.A., 1952 (Columbia University); additional graduate work at University of Colorado.

ROSS CLIFFORD CHARLES SURPHLIS, *French*
B.S., 1959 (St. Louis University); M.A., 1962 (University of Missouri); additional graduate work at the University of Illinois and St. Louis University.

EARL DONALD TALBERT, *Electronic Data Processing*
A.B., 1951 (Catawba College); graduate work at North Carolina State University at Raleigh and Appalachian State University; Professional Certificate in Data Processing.

JANET K. TANNER, *Associate Degree Nursing*
B.S.N., 1966 (State University of New York at Buffalo).

WILLIAM S. TEMPLE, *Mathematics*
A.B., 1956 (Lenoir Rhyne College); M.Ed., 1962 (University of North Carolina at Chapel Hill); additional graduate work at Duke University.

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MARK F. TINKHAM, *Physics*
A.B., 1931, M.Ed., 1957 (University of North Carolina at Chapel Hill); additional graduate work at Davidson and Florida State University.

JOHN DOUGLAS TRIPP, SR., *Counselor*
B.S., 1947 (North Carolina State University at Raleigh); M.R.E., 1951 (Southwestern Baptist Theological Seminary); additional graduate work at Appalachian State University, North Carolina State University at Raleigh, University of Virginia; Candidate for Ed.D. (Auburn University).

CHARLES H. G. TURNER, *Business Administration*
B.A., 1966 (Wake Forest University); M.B.A., 1968 (East Tennessee State University).

THOMAS M. VANCE, *English*
B.S., 1960, M.A., 1962 (Appalachian State University).

EDWARD FRANCIS WAECHTER, SR., *Machine Tools Laboratory*
Undergraduate work at University of Cincinnati, Xavier University and Ohio College of Applied Science.

MARGARET FINCHER WAGONER, *Secretarial Curricula*
B.S., 1961 (Appalachian State University); graduate work at University of North Carolina at Greensboro.

ROBERT G. WALLACE, *Welding*
Diploma, 1963 (Central Piedmont Community College).

SARA J. WARREN, *Secretarial Curricula*
B.S., 1966, M.A., 1967 (Appalachian State University).

DOLLIE MOORE WEEKS, *Associate Degree Nursing*
Diploma, 1935 (Warren Candler Hospital School of Nursing); B.S.N., 1947 (American University); graduate work at William and Mary College and Johns Hopkins University.

RALPH W. WHITLEY, *History*
A.B., 1965 (University of North Carolina at Chapel Hill); M.A., 1968 (Appalachian State University).

SHIRLEY C. WICKLUND, *Librarian*
B.S., 1959 (Moorhead State College); M.S., 1967 (Florida State University).

JULIA ROSE WILKINSON, *Practical Nursing*
Diploma, 1936 (Rex Hospital School of Nursing); B.S., 1952 (George Peabody College for Teachers); additional work at North Carolina State University at Raleigh.

SAM S. WILLIAMS, *Civil Engineering Technology*
B.S., 1935 (Carnegie Institute of Technology); M.S., 1948 (Iowa State College); Registered Professional Engineer.

DAVID ALEXANDER YONDERS, *Political Science, Sociology*
A.B., 1950, M.Ed., 1952 (Ohio University); additional graduate work at Ohio State University and University of Tennessee.

PATRICIA C. YONDERS, *Biology*
B.A., 1962 (Meredith College); M.A., 1966 (Wake Forest College).

PART TWO

GENERAL INFORMATION

MAILING ADDRESS

Central Piedmont Community College
Post Office Box 4009
Charlotte, North Carolina 28204

STREET ADDRESS

Central Piedmont Community College
Elizabeth Avenue at North Kings Drive
Charlotte, North Carolina

OFFICE HOURS

Administrative Offices are open from 8:00 A.M. to 5:00 P.M., Monday through Friday.

The Office of Student Services is open from 8:00 A.M. to 9:00 P.M., Monday through Thursday and from 8:00 A.M. to 5:00 P.M. on Friday.

The College telephone number is 372-2590.

INFORMATION

Requests for information should be made by mail or telephone to the Office of Student Services.

The College reserves the privilege of changing, without notice, any information in this catalog.

I. THE COLLEGE

Philosophy and Objectives

The doors of Central Piedmont Community College are open and accessible to all adults seeking to further their education. The College recognizes its responsibility to the community by providing general services to the surrounding area; by helping each student recognize his potential as a worthwhile and productive member of society; by providing opportunities for each student to develop his physical, intellectual, and esthetic capacities according to his desire to pursue an education; and by assisting each student to attain goals consistent with his needs, interests, and abilities.

The College seeks to implement its philosophy by:

(1) Providing the first two years of work in the liberal arts and pre-professional fields for those students who wish to transfer to four-year colleges.

(2) Providing occupationally-oriented curricula for those students who wish to enter employment as manufacturing and engineering technicians.

(3) Providing occupationally-oriented curricula for those students who wish to be employed in business and commerce.

(4) Providing occupationally-oriented curricula for those students who wish to enter employment in health-related fields.

(5) Providing occupationally-oriented curricula for those students who wish to enter employment in public service areas.

(6) Providing occupationally-oriented curricula for those students who wish to enter employment in the skilled trades.

(7) Providing a program of general education for the social, cultural and personal development of those individuals wishing to continue their education beyond the high school.

(8) Providing single or combination courses needed by adults in the community to update their occupational capabilities to meet the challenges of a changing technological society.

(9) Providing courses for those individuals whose education stopped short of high school graduation and for those who wish instruction in home and family education and leisure time activities.

(10) Providing counseling and guidance services to all students.

(11) Providing community educational services for organizations and individuals—including speakers, concerts, resource personnel or materials, special institutes or programs and reading lists as requested.

History

In 1963 the North Carolina General Assembly authorized a system of comprehensive community colleges to be established throughout the state in areas where the need was sufficiently documented. Central Piedmont Community College was established as a part of this system in July 1963. The first programs offered by the College involved curricula in occupationally-oriented areas. The first liberal arts curricula were offered in September 1964.

The College has grown from its initial on-campus enrollment of 1691 in September 1963 to an enrollment in September 1967 of 4567. Recognition of this growth, coupled with an awareness of the prospect of continued development led the voters of Mecklenburg County to approve in January 1966 a bond issue of three million dollars to assist in financing the first phase of the campus development plan. Early in 1968 construction was completed on a new classroom building and a new counseling center-administration building. A new learning resources center is now under construction and is expected to be ready for occupancy by October 1969.

Location

The campus, situated at 1141 Elizabeth Avenue in downtown Charlotte, is ideally located near the center of the population which it serves and is convenient to public transportation and the expressway system serving the greater Charlotte area.

Instructional Facilities

The institution is supported by state, federal and local funds and thus is able to provide superior instruction and optimum use of excellent equipment and laboratories at a minimum cost to the student. Present facilities include the following:

Campus and Buildings

The campus includes parking areas and a library, classrooms and well-equipped, modern laboratories and specialized shop areas.

Library Facilities

The library has a collection of over 20,000 books and catalogued pamphlets and receives over 200 periodicals. New titles are being added continually. The open-shelf system is used and students are encouraged to browse and use the reading room as a quiet place to study.

Studios, Laboratories and Shops

Ample opportunity for students to make practical application of their classwork is an inherent part of many programs offered at the College. The campus complex contains numerous laboratories, shops and specialized instructional areas. Each of these areas is furnished with the best equipment available.

Programmed Materials Laboratory

The programmed materials laboratory is a learning laboratory whose purposes are: (1) To provide developmental programs for students whose educational backgrounds have not prepared them for the curricula they have chosen; (2) To provide supplementary programs that are coordinated with many of the regular classes taught at Central Piedmont; (3) To provide a variety of programs for those who wish to broaden their knowledge. The laboratory uses primarily materials that are programmed; that is, the material is presented in a series of steps or frames. Each frame gives a small amount of information, and the learner must actively respond to each frame thereby enforcing his learning step by step. By using this method each individual is in competition only with himself. There are no specific assignments and no specific test days. The learner may progress as rapidly as he can or as slowly as he feels is necessary. There are qualified counselor-coordinators on duty at all times to advise and assist students and to acquaint them with their particular programs. The programmed materials laboratory now has more than eighty different programs and is constantly engaged in adding newer and better programs.

Building Program

The College has developed a Master Plan of campus development which is designed to meet its present and future needs. Included in the first phase of this plan were the acquisition of additional property and the construction on this property of a new classroom building, a new counseling center-administration building and a new learning resources center. Construction of the new classroom building and the counseling center-administration building is now completed. Construction of the learning resources center is underway with completion slated for October 1968.

Financing of the first phase of the Master Plan is provided by federal and state funds and a bond issue of three million dollars approved in 1966 by the voters of Mecklenburg County.

Accreditation

Central Piedmont Community College is approved by the North Carolina State Board of Education. It is a member of the American Association of Junior Colleges and the North Carolina Association of Junior Colleges.

Central Piedmont Community College has established contact with the Southern Association of Colleges and Schools and is working closely with the Association in order to gain accreditation and membership at the earliest date possible.

II. ACADEMIC INFORMATION

Programs of Instruction

The College offers a wide variety of learning opportunities to all who seek instruction or training. These opportunities for learning are organized into five general instructional programs.

1. The Associate in Arts Degree Program

The purpose of this program is to provide curricula in the liberal arts and the pre-professional areas which will enable the student to enter as a junior at the four-year institution of his choice. While the liberal arts curricula suggested in Part Five of this catalog will satisfy the requirements of most senior institutions, it is the student's responsibility to identify as early as possible the institution to which he will transfer and to ascertain the specific requirements of that institution for the freshman and sophomore years. Each student's curriculum should be planned by the student and his faculty adviser with a specific four-year institution in mind.

2. The Associate in Applied Science Degree Program

This program offers business curricula, health-related curricula, public service curricula and curricula in engineering technologies. These curricula are designed to enable the graduate to enter an occupation with a marketable skill, a high level of competency and the ability to communicate intelligently. The curricula provide not only highly specialized courses to develop occupational skill but also general education courses to enable the student to be an effective member of society. The following curricula are included in this program: Accounting; Business Administration; Chemical Technology; Commercial Art and Advertising Design; Civil Engineering—Architectural Technology, with option of specializing in Civil Engineering or Architecture; Dental Hygiene; Mechanical Engineering Technology, with option of specializing in Drafting and Design or Manufacturing; Electrical-

Electronics Technology, with option of specializing in Electrical or Electronics; Associate Degree Nursing; Secretarial, with option of specializing in Executive, Legal or Medical; Traffic and Transportation; Police Science and Criminology; Physical Therapy Assisting; Business and Scientific Data Processing.

In addition, the College in cooperation with Rowan Technical Institute offers training leading to a degree in Fire Science Technology. Classes are scheduled so that persons who are employed as firemen can take them during off-duty time at night.

3. The Diploma Program

This program offers curricula designed to meet the ever-increasing need of our complex society for skilled craftsmen. A graduate from a vocational curriculum should enter employment with a high degree of manipulative skill. The graduate also gains knowledge of basic mathematics, science and communication. The following curricula are available: Automotive Body Repair; Automotive Mechanics; Dental Assisting; Air-Conditioning and Refrigeration; Machinist; Medical Office Assisting; Practical Nursing; Welding; Electrical Installation.

4. The Adult Continuing Education Program

The Adult Continuing Education Program strives to meet the needs of the adult out-of-school population of the area by:

Providing general education opportunities to those who desire pre-high school courses, high school completion courses and cultural and enrichment courses.

Providing extension courses to those who desire vocational training, retraining or upgrading.

No college credit is granted for these courses; however, a certificate is awarded upon completion of many of them. Most, but not all, of these classes meet off-campus to fill a specific need at a specific time. Almost any educational need of the community not being met by a regular curriculum class can be met by the Adult Continuing Education Program. Information about courses now being offered may be found in Part Three of this catalog.

5. The Developmental Studies Program

The Developmental Studies Program is designed for the student whose level of achievement at the time of admission to the College indicates a low probability of success in curriculum courses. The Developmental Studies Program consists of conventional classroom instruction and individualized study in the programmed materials laboratory.

Admission Requirements

Central Piedmont Community College, following an "open door" policy, does not impose restrictive standards for admission to the College. Admission to the College, however, does not necessarily imply immediate admission to the curriculum desired by the student. Before the student is admitted to any curriculum a counseling interview is arranged and, in most cases, a series of aptitude and placement tests is scheduled. This process aids the student in evaluating his potential for success in the curriculum of his choice. When scores on tests or other evidence indicate a lack of readiness to commence a specific curriculum, the student will be assigned to the

Developmental Studies Program, to the Adult Continuing Education Program, or he may be encouraged to re-evaluate his occupational and educational goals.

All degree curricula require high school graduation or the equivalent. The high school graduation requirement is considered to have been met by graduation from high school, possession of a State High School Equivalency Certificate or possession of an Adult High School Diploma.

Admission to a diploma curriculum is permitted upon demonstration of an aptitude for the particular curriculum as determined by tests, counseling interviews and personal interest.

Requirements for admission to the various Adult Continuing Education courses depend on the course involved. Specific information may be obtained about particular courses by contacting the Office of Student Services of Central Piedmont Community College.

Central Piedmont Community College will accept credits from other colleges, technical institutes and industrial education centers. Only courses applicable to the desired program at Central Piedmont Community College in which grades of "C" or better have been made will be accepted for credit. The Office of Student Services will evaluate the transcript and determine the courses which are transferable.

Admission Procedures

Applicants wishing to enroll in any curriculum offered by the College should:

1. Obtain an application form from the Office of Student Services.
2. Submit the properly completed application along with a $2.00 testing fee to the Office of Student Services.
3. Request that a transcript of all high school, pre-college and college work be sent directly to the Office of Student Services.
4. Take an appropriate pre-enrollment test battery if deemed necessary by the Office of Student Services.
5. Have an interview with a counselor and/or departmental adviser during which the applicant's test scores and previous scholastic record will be evaluated and the applicant will be advised regarding eligibility to enter the desired curriculum. A first quarter schedule will be suggested.
6. Register for the suggested schedule during the regular registration period.

While most new students will be seeking enrollment in a curriculum and should follow the steps listed above, the College recognizes that many adults in the community will wish to register for one or more courses as a student not a candidate for a degree or diploma (SNCD). In order to encourage this type of interest the College will allow a qualified person to be admitted to the College and enroll for courses without taking the pre-enrollment test battery provided the person does not wish to enter a degree or diploma curriculum.

The College reserves the privilege of limiting the number of quarters during which a student may maintain this special status.

Admission procedures for courses offered in the Adult Continuing Education Program are announced where appropriate.

While students may complete the entire admission procedure during the registration period, advance completion of the first four steps is advised since it will insure adequate counseling and entry into a program in which enrollment may be limited.

Registration

The College year consists of four quarters. Students who are pursuing a curriculum must register at the beginning of each quarter as they progress toward their educational objectives. All students will register during the prescribed registration period for that quarter (refer to school calendar).

Continuing students have the opportunity to preschedule their courses before the beginning of a quarter. Students who take advantage of this opportunity are assigned a specific hour for registration. Students who are not a candidate for a degree or diploma (SNCD) may not register until after 4:00 P.M. on the last day of registration. A minimum of one-third of tuition charges must be paid at the time of registration.

Late Registration

A student may register late *prior to the first meeting of class*(es) for which he is registering, providing

1. The class is not cancelled or closed;
2. The student pays $5.00 late registration fee in full at time of late registration;
3. The student was pre-advised or otherwise fully admissible to the courses for which he registers;
4. The student convinces his Dean and the Dean of Student Services that it was impossible or would have involved extreme hardship for him to register at the appointed time.

Calendar

SUMMER QUARTER, 1968

Registration	July 9, 10, 1968
Classes begin	July 12
Labor Day holiday	September 2
Last day of classes for quarter	September 13

FALL QUARTER, 1968

Registration	September 30, October 1, 1968
Classes begin	October 3
Thanksgiving recess begins at 10:30 P.M.	November 27
Classes resume	December 2
Last day of classes for quarter	December 20

WINTER QUARTER, 1969

Registration	January 3, 6, 1969
Classes begin	January 8
Quarter ends	March 25

SPRING QUARTER, 1969

Registration	March 27, 28, 1969
Easter recess begins at 8:00 P.M.	March 28
Classes begin	April 7
Quarter ends	June 20

SUMMER QUARTER, 1969

Registration	July 8, 9, 1969
Classes begin	July 11
Labor Day holiday	September 1
Quarter ends	September 12

FALL QUARTER, 1969

Registration	September 29, 30, 1969
Classes begin	October 2
Thanksgiving recess begins at 10:30 P.M.	November 26
Classes resume	December 1
Quarter ends	December 19

Registration Priority

Any first-time student may be assured a place in a diploma or degree curriculum upon payment of a $15.00 fee (non-refundable) before the official registration period. This registration priority fee will be credited to tuition charged for the quarter in which reserve space is requested. In order to claim the registration priority thus established, the student must register during the period assigned to pre-scheduled students. Returning students may establish registration priority by pre-scheduling their courses prior to the registration period. Students not candidates for a degree or a diploma (SNCD) may not establish registration priority.

Class Attendance

Absences are a serious deterrent to good scholarship; it is impossible to receive instruction, obtain knowledge or gain skill when absent. As all students are adults with many responsibilities, an occasional absence from class might be absolutely necessary; however, such absences in no way lessen the student's responsibility for meeting the requirements of the class. There is always a direct relationship between the number of class absences and the final grade. It is the student's responsibility to contact the instructor for any missed assignments. Explanation for missing a class will not be demanded, but, as a matter of courtesy, the reason for an absence should be given to the instructor.

Withdrawal from Classes

Students must notify the Office of Student Services when they plan to withdraw from a course or program. Failure to withdraw officially results in the automatic assignment of an "F" grade for the work attempted.

A student who officially withdraws before the end of the fifth week of the quarter will receive a grade of "W". The grade of "W" will carry no penalty as it will not count as hours attempted.

After the fifth week, a student who is passing may withdraw officially at any time before the final examination and receive a grade of "W". A student who withdraws from the course after the end of the fifth week and who is failing receives a grade of "WF".

Under no circumstances will a student receive a "W" or a "WF" unless he has properly dropped the course and his instructor has been officially notified by the Office of Student Services.

Course Load

A degree or diploma student who is registered for the equivalent of at least twelve quarter hours of credit is considered a full-time student.

The suggested contact hours per quarter shown for each curriculum in the catalog are minimal. It is a policy of this College to permit students to enroll in additional subjects and laboratory work beyond those shown in the catalog.

When in any quarter the total weekly contact hours listed are fewer than twenty-five hours in a technical curriculum and fewer than thirty hours in a vocational trade curriculum, a student may enroll on request for additional instructional hours deemed by the College to be consistent with the program and appropriate to the student to make up twenty-five hours per week in a technical curriculum or sufficient hours of attendance to make up thirty hours per week in a vocational trade curriculum.

Grading System

Letter Grades

The following letter grades are used at Central Piedmont Community College:

LETTER	NUMERICAL EQUIVALENT	DESCRIPTION	QUALITY POINTS PER QUARTER HOUR
A	94-100	Excellent	4
B	85-93	Good	3
C	77-84	Fair	2
D	70-76	Passing	1
F	Below 70	Failing	0
W		Withdrawn from class	
WF		Withdrawn from class failing	
S		Satisfactory	
P		Progress	
U		Unsatisfactory	

Incompletes

A grade of "F" is assigned when course work is incomplete. This grade can be removed if the course is completed satisfactorily before the end of the following quarter.

Quality Point Average

A student's quality point average is the equivalent of his numerical average for all course work attempted. As the student progresses toward graduation and/or transfer, his quality point average of 2.0 is equivalent to an average grade of "C" on all courses attempted. The student should refer to the Student Handbook for instructions pertaining to the calculation of his quality point average.

Probation and Suspension

Any student whose cumulative quality point average is less than 2.0 at the end of any full term is placed on academic probation and will be requested to report to the Office of Student Services for counseling. The counselor will attempt to identify the problems of the student and may direct the student to a program for which he is better qualified.

A student will not be allowed to continue in a program without special permission from the Office of Student Services if his cumulative quality point average is below the following values:

ATTEMPTED HOURS	QUALITY POINT AVERAGE
0-17	1.00
18-34	1.25
35-51	1.50
52-68	1.75
69-84	1.75
85-above	1.90

Those students seeking any degree must have a 2.0 quality point average at 96 attempted credit hours.

Graduation

Graduation exercises are held each year. Central Piedmont Community College awards two degrees: the Associate in Arts Degree upon completion of an approved two-year curriculum of liberal arts courses; and the Associate in Applied Science Degree upon completion of an approved two-year curriculum of study designed to prepare the student to enter an occupation. A diploma is granted upon completion of a one-year program of vocational study. Degrees and diplomas are conferred only during the graduation exercises.

The requirements for a degree are as follows:

1. Completion of a minimum of 96 hours in an approved curriculum.
2. A minimum of 32 quarter hours earned in residence at Central Piedmont Community College, 16 of which must be the final credit hours earned prior to graduation.
3. A cumulative quality point average of 2.0 in credit work.

The requirements for a diploma are as follows:

1. Completion of an approved one-year vocational curriculum.
2. A minimum of 32 quarter hours earned at Central Piedmont Community College, 16 of which must be the final hours of credit earned prior to graduation.
3. A cumulative quality point average of 2.0.

III. FINANCIAL INFORMATION

Tuition and Fees

Since the College receives financial support through local, state and federal sources, tuition is very low. Tuition charges are set by the North Carolina State Board of Education and are subject to change without notice. Students applying for admission to a curriculum may pay an optional registration priority fee of $15.00. This fee guarantees the student an entry into the curriculum if he meets the standards for admission. For in-state students registered for credit courses, tuition and fees are as follows:

Fees

Student Publication and Activity Fee—$.75 per quarter.

Tuition

Associate in Arts Curricula
  Students enrolled for 15 quarter hours or more—$42.00 per quarter
  Students enrolled for fewer than 15 quarter hours—$3.00 per quarter hour
Associate in Applied Science and Vocational Curricula
  Students enrolled for 15 quarter hours or more—$32.00 per quarter
  Students enrolled for fewer than 15 quarter hours—$2.50 per quarter hour

Tuition charged for non-credit classes in the Continuing Education Program depends on the nature of the class. Basic adult education classes and adult high school completion classes have no tuition. Instructional materials fees for certain classes are set to meet the specific need for the particular type of class or seminar being conducted.

The student publication and activity fee and a minimum of one-third of tuition are payable at registration.

Out-of-state students will pay tuition two and one-half times the in-state rate. A definition of legal residency as established by the Attorney General's Office follows.

Residence Status

A legal resident of North Carolina is one who has his domicile in this state. It is important that each applicant for admission and each enrolled student know his residence status for tuition payment and understand the regulations governing residence status. The following regulations cover most factual situations.

1. A person twenty-one years of age or older is not deemed eligible for the lower tuition rate unless he has maintained his legal residence in North Carolina for at least the six months next preceding the date of his first en-enrollment in an institution of higher education in this state.

2. The legal residence of a person under twenty-one years of age at the time of his first enrollment in an institution of higher education in this state is that of his parents, surviving parent or legal guardian. In cases where parents are divorced or legally separated the legal residence of the father will control unless custody of the minor has been awarded by court order to the mother or to a legal guardian other than a parent. No claim of residence in North Carolina based upon residence of a guardian in North Carolina will be considered if either parent is still living unless the action of the court appointing the guardian antedates the student's first enrollment in a North Carolina institution of higher education by at least twelve months.

3. The residence status of any student is determined as of the time of his first enrollment in an institution of higher education in North Carolina and may not thereafter be changed except: (a) in the case of a nonresident minor student at the time of his first enrollment whose parents have subsequently established legal residence in North Carolina; and (b) in the case of a resident who abandons his legal residence in North Carolina. In either case, the appropriate tuition rate will become effective at the beginning of the semester or term next following the date of change of residence status.

4. The legal residence of a wife follows that of her husband, except that a woman student currently enrolled in this institution as a resident may continue as a resident even though she marry a nonresident.

5. Military personnel attached to military posts or reservations in North Carolina are not considered eligible for the lower tuition rate unless they have maintained a legal residence in the state for at least the six months next preceding the date of first enrollment in an institution of higher education in this state.

6. Aliens lawfully admitted to the United States for permanent residence who have established a legal residence in North Carolina according to above paragraphs numbered 1, 2 or 4 are eligible for the lower tuition rate.

7. Ownership of property in or payment of taxes to the state of North Carolina apart from legal residence will not qualify one for the lower tuition rate.

Any student or prospective student in doubt concerning his residence status must bear the responsibility for securing a ruling by stating his case in writing to the comptroller of Central Piedmont Community College.

Refund Policy

Two-thirds of the tuition paid by a student will be refunded if the student withdraws from the College within ten calendar days after the first day of classes as published in the College calendar. If a student voluntarily withdraws from a class while remaining enrolled in College, he will receive no refund for courses dropped. If a class is cancelled by the College, that portion of a student's tuition which was paid for the cancelled class will be refunded in full. Changes permitted by the Office of Student Services during the registration period are adjusted in full.

The activity-publication fee is not refundable. Tuition refunds of $5.00 or less will not be made except for classes cancelled by the College.

Financial Aid

Students who need financial aid can receive assistance from four sources: (1) scholarships, (2) short- and long-term loans, (3) the College Work-Study Program and (4) Educational Opportunity Grants. In addition, there are other programs of special interest to veterans and disabled persons. Students should make known their need for financial assistance when filing application for admission. Requests for financial aid should be made through the Office of Student Services.

Scholarships

The total value of a scholarship awarded to a student is payable in amounts prorated to each quarter of the College year. The initial grant is made for one quarter; upon evidence of satisfactory performance by the recipient, the grant is renewable for a maximum of three succeeding quarters. A grant for a second year may be made upon re-application to the Office of Student Services. Students who are now attending a school in the Charlotte-Mecklenburg system should seek the assistance of their counselor in obtaining a scholarship.

Scholarships available at this date are:

BARNHARDT MANUFACTURING COMPANY SCHOLARSHIP

These scholarships are donated by the Barnhardt Manufacturing Company of Charlotte. The maximum amount available to a student in any one year is $200.

CHARLES A. MOSS SCHOLARSHIP

These scholarships, awarded annually to students taking the Practical Nursing curriculum, cover the cost of all tuition, fees and textbooks.

CHARLOTTE AUTOMOTIVE WHOLESALERS SCHOLARSHIP

The Charlotte Automotive Wholesalers make this scholarship available to students taking either the Automotive Mechanics or Automotive Body Repair curriculum.

CHARLOTTE CHAPTER OF NATIONAL SECRETARIES ASSOCIATION SCHOLARSHIP

This scholarship is awarded to students in the Executive Secretarial curriculum.

CHARLOTTE MEMORIAL HOSPITAL AUXILIARY SCHOLARSHIP

Two scholarships of $1000 per year each are awarded annually to one first-year and one second-year student enrolled in the Associate Degree Nursing curriculum. The recipient agrees to accept employment at Charlotte Memorial Hospital for a period of one year following graduation or to donate one-half the amount of the scholarship to the Charlotte Memorial Auxiliary Scholarship Fund.

COLONEL J. N. PEASE SCHOLARSHIP

These scholarships are awarded to students in the areas of Pre-Engineering, Civil Engineering, Manufacturing Engineering, Architecture or Drafting and Design. An award of $200 is given to each recipient.

CONCRETE MATERIALS, INC., SCHOLARSHIP

Concrete Materials, Inc., makes available scholarships of $200 to students studying in the Civil Engineering curriculum.

CONCRETE SUPPLY COMPANY SCHOLARSHIP

Several $200 scholarships are awarded by Concrete Supply Company to students in the Civil Engineering curriculum.

DICKSON FOUNDATION SCHOLARSHIP

The Dickson Foundation makes available a $750 scholarship to a student enrolled in the Associate Degree Nursing curriculum.

DR. MARTIN LUTHER KING MEMORIAL SCHOLARSHIP

These scholarships, established as a memorial to Dr. Martin Luther King, Jr., are awarded to deserving students in need of financial assistance. They cover cost of tuition, books and fees.

HEALTH PROGRAM SCHOLARSHIP

A Charlotte church has made possible several scholarships to be used for students enrolled in the College's health curricula. The maximum scholarship available is $200 for one year.

JEFFERSON STANDARD FOUNDATION SCHOLARSHIP

One two-year scholarship of $200 per year is awarded annually to a deserving student. This is donated by Jefferson Standard Broadcasting Company.

JOHN A. POLITES SCHOLARSHIP

These scholarships are awarded by Mr. and Mrs. John A. Polites to deserving orphans or to students in whose homes the mother is the only wage earner and is unable to contribute the necessary money needed to attend Central Piedmont Community College. Each scholarship provides $60 per quarter toward tuition and books and includes meals at the Athens Restaurant on days the scholarship recipient is on campus.

MARTIN CANNON FOUNDATION SCHOLARSHIP

Two scholarships of $500 each will be awarded to deserving students enrolled in the Associate Degree Nursing curriculum. One scholarship is awarded to a first-year student; the other, to a second-year student.

PELTON AND CRANE SCHOLARSHIP

Pelton and Crane Company each year gives two scholarships to students in the Dental Hygiene curriculum and two scholarships to students in the Dental Assisting curriculum.

PNEUMAFIL CORPORATION SCHOLARSHIP

These scholarships of $200 each are awarded to two deserving students enrolled in the Welding curriculum and to two in the Drafting and Design curriculum.

RICHMOND DENTAL COTTON COMPANY SCHOLARSHIP

These scholarships, donated by the Richmond Dental Cotton Company, Charlotte, are awarded to students enrolled in one of the College's dental curricula. The maximum amount awarded to a student in any one year is $200.

RUTH MOSS EASTERLING SCHOLARSHIP

This scholarship of $150, donated by the Metropolitan Business and Professional Women's Club of Charlotte, is awarded annually to a woman student.

SCHOENITH FOUNDATION SCHOLARSHIP

A scholarship of $929 is given by the Schoenith Foundation to a student in the Associate Degree Nursing curriculum. One-half of this award must be repaid.

TERRELL MACHINE COMPANY SCHOLARSHIP

The Terrell Machine Company of Charlotte contributes annually two scholarships of $200 each to be awarded to deserving students in the Manufacturing Engineering Technology, Drafting and Design Technology or Machinist curricula.

Short-Term Loans

A revolving loan fund was established in 1964 at Central Piedmont Community College for the benefit of students who, at the time of registration, do not have all the necessary money to pay for tuition, fees, books and supplies. Students who need small emergency loans and who state that this is a temporary condition may apply for a short-term loan. These loans are made, interest free, for a maximum period of sixty days. Donors to this fund include local businesses, civic organizations and individuals.

Long-Term Loans

NATIONAL DEFENSE STUDENT LOANS

Central Piedmont Community College is participating in the National Defense Student Loan Program. This program makes funds available to freshmen or sophomores who are taking at least a half-time schedule in one of the Associate Degree programs. The College share, ten per cent, is being contributed by civic organizations.

The National Defense Student Loan Program makes provisions for students to borrow up to $1,000 in any one year. Three per cent interest per year is charged on the unpaid balance, beginning nine months after the borrower ceases to pursue a course of study at an institution of higher learning. The total loan must be repaid in ten years. Students may make application through the financial aid counselor in the Office of Student Services.

THE COLLEGE FOUNDATION, INC.

The College Foundation, Inc., Raleigh, North Carolina, administers several loan funds, including the North Carolina Bankers Student Loan Plan and the James E. and Mary Z. Bryan Foundation Student Loan Plan. Students of Central Piedmont Community College may apply for these loans through the Office of Student Services.

The College Work-Study Program

The College participates in the Federal College Work-Study Program whereby a needy student may earn money for college expenses by working at the College. Students are permitted to work a maximum of fifteen hours per week. The College share is contributed by the Central Piedmont Community College Foundation, Inc.

Requests for information should be directed to the Office of Student Services.

Educational Opportunity Grants

The Educational Opportunity Grants were established in the Higher Education Act of 1965 for students from families of modest incomes, with particular attention given to those families whose incomes allow little if any contribution toward college expenses. These funds are administered by the College. Eligible students should apply through the Office of Student Services.

Financial Assistance for Veterans, War Orphans and the Disabled

The College provides educational opportunities for veterans, war orphans and children of totally disabled veterans. Veterans seeking training under the provisions of Public Laws 894 and 87-815 (Veterans Vocational Rehabilitation Program), Public Law 89-358 (Veterans Readjustment Benefits Act of 1966), war orphans seeking training under Public Law 634 (War Orphans Educational Assistance Act of 1956) and children of totally disabled veterans desiring benefits of Public Law 88-361 should contact the Office of Student Services or the Mecklenburg County Veterans Service Office.

The College also assists students seeking North Carolina Veterans Commission Scholarships and North Carolina Vocational Rehabilitation Assistance. Students desiring assistance in these areas should contact the Office of Student Services.

Foreign Students

Any foreign student who is in school, or who is seeking admittance under an F-1 visa, should contact the Foreign Student Adviser in the Office of Student Services. The Adviser will be glad to assist in matters such as extension of stay, possible employment or transfer for additional education.

IV. THE STUDENT AND THE COLLEGE

The College is aware that college life creates new challenges for students. To aid the student in meeting these challenges and to provide opporopportunities for the maximum development of each student, the College supports a number of services and activities to supplement the academic program.

Guidance and Counseling

Educational, vocational and personal counseling is available to students at Central Piedmont Community College from two sources: the Office of Student Services and the Faculty Advisory System.

The Office of Student Services provides admission counseling to help the student decide whether the program for which he has applied is realistic and whether it will satisfy his educational needs and vocational goals. The Office of Student Services counsels frequently with all students who are either assigned to developmental work or are on academic probation. Personal-social counseling is also available to any student who wishes to take advantage of this service.

Each student, after admission to the College, is also assigned to a faculty adviser. This adviser assists the student in planning his course schedules. The faculty adviser will inform the student of his academic progress and quality point average and can suggest improvements or changes needed.

Bookstore

It is the student's responsibility to obtain the required textbooks and supplies prior to the first meeting of a class. The College maintains a bookstore from which the student may purchase the necessary books and supplies. The bookstore will buy used books from students when possible.

Parking

The campus includes a paved and well-lighted parking area. Students may use all of this area except those portions reserved for faculty parking. Campus parking regulations are enforced and fines are levied for violations.

Snack Bar

The College provides vending machines and an eating area for food and soft drinks.

Student Lounge

A student lounge is provided adjacent to the snack bar. Students are encouraged to use this area for relaxation between classes and for social gatherings and group meetings.

Lost and Found

The Office of Student Services operates a lost and found service. Any articles found should be turned into this office. Any student losing an article should contact this office.

Housing

The College does not provide living accommodations for students; however, a card file listing of available rooms and apartments is maintained in the Office of Student Services. Most of these accommodations are within walking distance of the College or are conveniently located to bus service. Associate Degree nursing students who reside outside the city limits of Charlotte may secure rooms at the Charlotte Memorial Hospital Nursing dormitory. In all cases the student is responsible for making arrangements to secure housing.

Student Conduct

College students are considered to be mature individuals. Their conduct, both in and out of college, is expected to be that of any respectable adult in a public place. Under these circumstances it is expected that the student will at all times remember that he is living in a democratic situation and that the reputation of the institution rests on his shoulders. Common courtesy and cooperation make the above suffice for a long list of rules and regulations.

Student Government

Every student has a voice in school affairs through the Student Government. Social events, interest clubs, athletic organizations and professional societies are planned and organized through the Activities Committee. Active organizations are chorus, dramatic club and Phi Beta Lambda; also there are student chapters of National Education Association, National League for Nursing, Licensed Practical Nurses and American Dental Hygienists' Association.

Student Publications

The Prospector, published monthly, is the official student newspaper. The staff welcomes contributions from students and faculty.

The Newsletter is a weekly publication of announcements and bulletins of general interest.

The Student Handbook, published annually, contains items of information helpful to the student in his life on campus.

Social and Cultural Events

The College will sponsor a number of social and cultural events during the year. Included in these activities will be dances, concerts and lectures.

PART THREE

THE ADULT CONTINUING EDUCATION PROGRAM

The Adult Continuing Education Program of Central Piedmont Community College provides general adult and extension courses for those individuals whose education stopped short of high school graduation, for those who wish instruction in home and family education and leisure time activities and for those who need short-term training, retraining or upgrading in a vocational or professional area.

College credit is not given for completion of courses in the Adult Continuing Education Program; however, a certificate is awarded by the College in some cases. Licenses, diplomas or other forms of recognition are awarded by certain non-College agencies upon successful completion of designated course sequences.

Tuition and fees for courses in the Adult Continuing Education Program depend upon the nature of the course. No tuition or fee is charged for basic adult or adult high school completion courses.

Admission requirements for courses in the Adult Continuing Education Program depend upon the nature of the course. Admission to most of these classes is gained by registering during the regular College registration period; entry into some may be made at any time in the quarter. While some of these classes are conducted on the College campus, most are in adult centers which are located in schools scattered throughout the area or in other locations appropriate to the nature of the course.

Information about a specific course may be obtained from the College. General information about the present types of course offerings may be found in the following section. Other types of non-credit courses may be offered to meet expressed needs of the community when evidence of these needs is presented to the College.

I. EXTENSION COURSES

Supervisory Development Training

Supervisory Development Training Classes train persons interested in becoming supervisors and provide instruction for supervisors at various levels of management as preparation for advancement.

Classes available to supervisory personnel are:

- Human Relations
- Economics in Business and Industry
- Art of Motivating People
- Effective Communications
- Effective Writing
- Effective Speaking
- Reading Improvement
- Work Measurement
- Job Methods
- Conference Leadership
- Creative Thinking
- Industrial Safety and Accident Prevention
- Industrial First-Aid

The Supervisor in North Carolina
The Supervisor and Employee Benefits
Job Analysis Training
Cost Accounting for Supervisors

Fire Service Training

The growing Piedmont area of North Carolina requires expansion of fire fighting units and an upgrading of fire service personnel. The need for better-trained personnel is met by the College through training provided in the latest techniques.

Fire service training is taken directly to the individual fireman. Training sessions are held in the local fire departments allowing the men to be trained as an organized group utilizing equipment they would ordinarily use in controlling fire.

Fire Service classes include:

Forcible Entry
Rope Practices
Portable Fire Extinguishers
Ladder Practices
Salvage and Overhaul Practices
Fire Apparatus Practices
Ventilation
Rescue Practices
Protective Breathing Equipment
Firefighting Procedures

These are non-credit courses. The College in cooperation with Rowan Technical Institute also offers an associate degree curriculum in this area.

Apprenticeship and Licensure Training

Many men learn a trade by working on the job where they acquire skills by using the tools of the trade. The College offers opportunities for these men to acquire related instruction in the classroom at night. Several of the trade areas in which related instruction is available are:

Electrical Code
Electrical Apprentice
Sheet-Metal Apprentice
Plumbing and Steamfitting Apprentice

Course sequences and course descriptions may be obtained from the College.

Law Enforcement Training

A growing need for better-trained law enforcement officers is met by the College through opportunities for training. Police Recruit Schools and Police Seminars are conducted several times a year in order to meet these needs. These are non-credit courses. The College also offers an associate degree curriculum in Police Science and Criminology.

MDTA Courses

Under the provisions of the Manpower Development Training Act (MDTA) persons who are unemployed or underemployed are eligible for certain types of training. In cooperation with the Employment Security Commission of North Carolina, the College offers specialized course work as scheduled by the Commission.

New Industry Training

The College offers specialized courses as needed to meet the needs of new industries in the area for workers with specific skills.

Training for Teachers of the Preschool Child

Emphasis in these classes is placed on the social, emotional and psychological development of the preschool child as it relates to his readiness for specific activities. Much of the student's time is devoted to learning and practicing creative methods of presenting activities to the preschool child.

II. GENERAL ADULT COURSES

Pre-High School Basic Adult Education

The Adult Continuing Education Program of Central Piedmont Community College offers classes in fundamental education to those persons who are between the levels of grade 0.0 and grade 8.9. Adults in the Pre-High School classes are divided into three levels:

Level I — Grade 0.0 - Grade 3.9
Level II — Grade 4.0 - Grade 6.9
Level III — Grade 7.0 - Grade 8.9

Upon completion of Grade 8.9, an adult is eligible to enroll in high school completion courses to obtain an adult high school diploma.

High School Completion

Adults who have not graduated from high school may earn an adult high school diploma through the High School Completion courses offered by the College. The adult high school diploma is an earned diploma granted by the local Board of Education upon certification of eligibility by the College.

An adult who has not met the requirements for high school graduation by having completed four units of English, one unit of mathematics, two units of general science and biology and one unit of American History must enroll for at least one quarter in each subject in which there is a deficiency. At the completion of a quarter and upon recommendation of the teacher a standardized test will be administered by the College. If a satisfactory level of achievement is indicated by the test score the student will be credited with having completed the subject and will be given credit toward graduation. English and mathematics must be completed first. If no high school credits have been earned, the adult must enroll for at least one quarter in a pre-high school class to demonstrate the possession of a functional eighth grade education. Upon completion of all requirements, the adult is recommended to the local Board of Education as eligible to receive the Adult High School diploma. The local Board of Education, according to previous agreement with Central Piedmont Community College, then issues the high school diploma.

General Interest Courses

The Adult Education Program offers courses for pastime and pleasure designated general interest. These off-campus courses are offered whenever interest is indicated by fifteen or more persons. Courses which are offered include:

Interior Design
Personal Typing
Know Your Automobile (For Women)
Flower Arranging
Personal Financing
Art
Hobby Photography

Home and Family Courses

Other classes designed to improve the average family—designated home and family — also are offered whenever interest is indicated by fifteen or more persons. Courses which are available include:

Sewing
Exercise and Weight Control
Quantity Cooking
Child Care

PART FOUR

THE ASSOCIATE IN APPLIED SCIENCE DEGREE PROGRAM

Descriptions Of

Business, Health, Engineering Technology and Public Service

Courses and Curricula

Leading To The

ASSOCIATE IN APPLIED SCIENCE DEGREE

The following section of the Catalog contains descriptions of the curricula listed below.

- Associate Degree Nursing

- Business
    - Accounting
    - Business Administration
    - Traffic and Transportation

- Commercial Art and Advertising Design

- Dental Hygiene

- Electronic Data Processing
    - Business
    - Scientific

- Engineering Technology
    - Chemical
    - Civil - Architectural
    - Electrical - Electronics
    - Mechanical
        - Drafting and Design Option
        - Manufacturing Option

- Fire Science Technology

- Physical Therapy Assisting

- Police Science and Criminology

- Secretarial
    - Executive Secretary
    - Legal Secretary
    - Medical Secretary

ASSOCIATE DEGREE NURSING

The need for adequately prepared registered nurses is acute, and this need is increasing. As advances in medical science continue to expand the life expectancy of individuals,the resulting growth in population increases the demand for nursing services. Nursing is devoted to conserving life and promoting health; it is based upon scientific knowledge, nursing skills and an understanding of the nature and needs of human beings in health and in sickness. The course of study leading to an Associate Degree in Nursing prepares the nurse to serve effectively in general duty nursing positions in hospitals and comparable settings. Students are admitted to the Associate Degree Nursing Curriculum in the Fall and Spring Quarters.

DESCRIPTION OF CURRICULUM

The degree Associate in Applied Science in Nursing will be awarded upon successful completion of this curriculum and graduates will be eligible to take the State Board examinations for licensure as registered nurses. The educational program consists of the study of nursing theory and practice interwoven with general education subjects such as the basic sciences, social sciences and English. These classes meet on the College campus, and nurses are in classes with other College students. Nursing experiences with patients are planned in the modern, up-to-date facilities of Charlotte Memorial Hospital and in other community health agencies. Clinical experiences are carefully selected for educational purposes and include the care of patients with medical, surgical and psychiatric problems, and the care of mothers, infants and children.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR ASSOCIATE DEGREE NURSING

Course Title			Hours per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER					
T-NUR	101	Fundamentals of Nursing I	4	6	6
T-BIO	105	Life Science I	4	2	5
PSY	201	General Psychology	5	0	5
			13	8	16
SECOND QUARTER					
T-NUR	102	Fundamentals of Nursing II	4	6	6
T-BIO	106	Life Science II	4	2	5
PSY	202	Human Development	5	0	5
			13	8	16
THIRD QUARTER					
T-NUR	103	Physical and Mental Health Nursing I	3	9	6
T-BIO	107	Life Science III	4	2	5
SOC	201	Introduction to Sociology	5	0	5
			12	11	16
FOURTH QUARTER					
T-NUR	104	Physical and Mental Health Nursing II	5	12	9
ENG	101	English Composition I	3	0	3
			8	12	12

FIFTH QUARTER

T-NUR 201	Physical and Mental Health Nursing III	5	12	9
ENG 102	English Composition II	3	0	3
SOC 203	Marriage and the Family	5	0	5
		13	12	17

SIXTH QUARTER

T-NUR 202	Maternal-Child Health Nursing I	5	12	9
ENG 103	English Composition III	3	0	3
	Elective	3		3
		11	12	15

SEVENTH QUARTER

T-NUR 203	Maternal-Child Health Nursing II	4	9	7
T-NUR 204	Nursing Seminar	1	6	3
T-NUR 205	Trends in Nursing	3	0	3
	Elective	3		3
		11	15	16

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

ENG 101 English Composition I (3–0) 3

Study of expository writing with analysis of methods of development; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods.

ENG 102 English Composition II (3–0) 3

Continuing study of composition, emphasizing the techniques of analysis and synthesis in writing, with short stories and novels providing substance. P.R. ENG 101 or consent.

ENG 103 English Composition III (3–0) 3

Intensive study of composition, emphasizing the critical reading of verse and drama and leading into the basic techniques in researching a topic and writing a documented paper. P.R. ENG 102 or consent.

PSY 201 General Psychology (5–0) 5

A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology.

PSY 202 Human Development (5–0) 5

Development of the normal child and adolescent, with consideration of the social, biological and cultural influences upon growth. P.R. PSY 201.

SOC 201 Introduction to Sociology (5–0) 5

An analysis of the society and culture dealing with social organization, control institutions, stratification and social change.

SOC 203 Marriage and the Family (5–0) 5

Study of the American family with attention given to courtship, marriage, family relationships and interdependencies, and social or cultural stresses emerging from contemporary family life. P.R. SOC 201 or consent.

T-BIO 105 Life Science I (4—2) 5

A course designed to provide an understanding of human anatomy, physiology and microbiology, coordinated with a study of the principles of chemistry and physics in support of these subjects.

T-BIO 106 Life Science II (4—2) 5

A continuation of T-BIO 105. P.R. T-BIO 105.

T-BIO 107 Life Science III (4—2) 5

A continuation of T-BIO 106. P.R. T-BIO 106.

T-NUR 101 Fundamentals of Nursing I (4—6) 6

The problem-solving approach is used as an approach to nursing care. The course begins with the students' understanding of man's basic needs and the problems which arise when these needs are not met. Scientific principles and applications from the areas of nursing, pharmacology and nutrition are included. Through knowledge, technical skills and interpersonal relationship techniques, the student learns to provide patient-centered nursing care. P.R. Admission to Associate Degree Nursing Program.

T-NUR 102 Fundamentals of Nursing II (4—6) 6

This course is designed to increase the students' ability to recognize patients' reactions to illness, to observe basic processes of illness and to plan and give individualized nursing care. Emphasis is placed upon the development of skills basic to specific nursing situations. P.R. T-NUR 101.

T-NUR 103 Physical and Mental Health Nursing I (3—9) 6

A study of the nursing needs of adults based upon developmental tasks and major health problems. Principles of pharmacology, nutrition, and interpersonal relationships continue to be interwoven, and concepts of mental health and their application in planning nursing care are included. P.R. T-NUR 102.

T-NUR 104 Physical and Mental Health Nursing II (5—12) 9

Continued study of the nursing needs and major health problems of adults. A portion of this course is designed to provide insight into the nursing needs of patients with behavior disorders due to mental illness. Emphasis is placed on the development of interpersonal relationships and increased nursing skills. P.R. T-NUR 103.

T-NUR 201 Physical and Mental Health Nursing III (5—12) 9

This course is designed to provide skills necessary for the care of medical and surgical patients with more complex nursing problems. Emphasis is placed on meeting both physical and emotional needs of patients. Concepts of progressive patient care and their application to patient-centered nursing are included. P.R. T-NUR 104 and a grade point average of 2.0 on all work attempted.

T-NUR 202 Maternal-Child Health Nursing I (5—12) 9

A study of maternal and child care based on the reproductive and developmental cycles of mothers and children. Emphasis is placed on the concepts of family-centered care and on health teaching. Knowledge of the normal maternity cycle and of the growth and development of the child from infancy through pre-adolescence is used as a basis for recognition of the deviations from normal which may be produced by illness and hospitalization and for planning nursing care. P.R. T-NUR 201, SOC 203.

T-NUR 203 Maternal-Child Health Nursing II (4—9) 7

A continuation of T-NUR 202. P.R. T-NUR 202.

T-NUR 204 Nursing Seminar (1—6) 3

This course will serve as an orientation to advanced nursing responsibilities with in-depth analysis of patient care problems. Emphasis will be placed on the role of the Associate Degree Nurse as a member of the nursing team and on various concepts and methods of providing patient care. P.R. T-NUR 101-104, T-NUR 201-203; C.R. T-NUR 205.

T-NUR 205 Trends in Nursing (3—0) 3

A study of the major trends in modern nursing and their effects on nursing service and nursing education. Emphasis is placed on the responsibilities of the nurse as a member of the health team and as a citizen in the community.

BUSINESS CURRICULA

Accounting
Business Administration
Traffic and Transportation

ACCOUNTING

Accounting is often called the "language of business." It is the language employed to communicate financial information. The accounting profession is important to the complete spectrum of business fields, ranging from governmental to small private businesses. Accountants are found in such forms of business operation as the sole proprietorship, partnership and corporation. Positions are available to accountants in general accounting, auditing, payroll accounting, credit and other specialized fields.

DESCRIPTION OF CURRICULUM

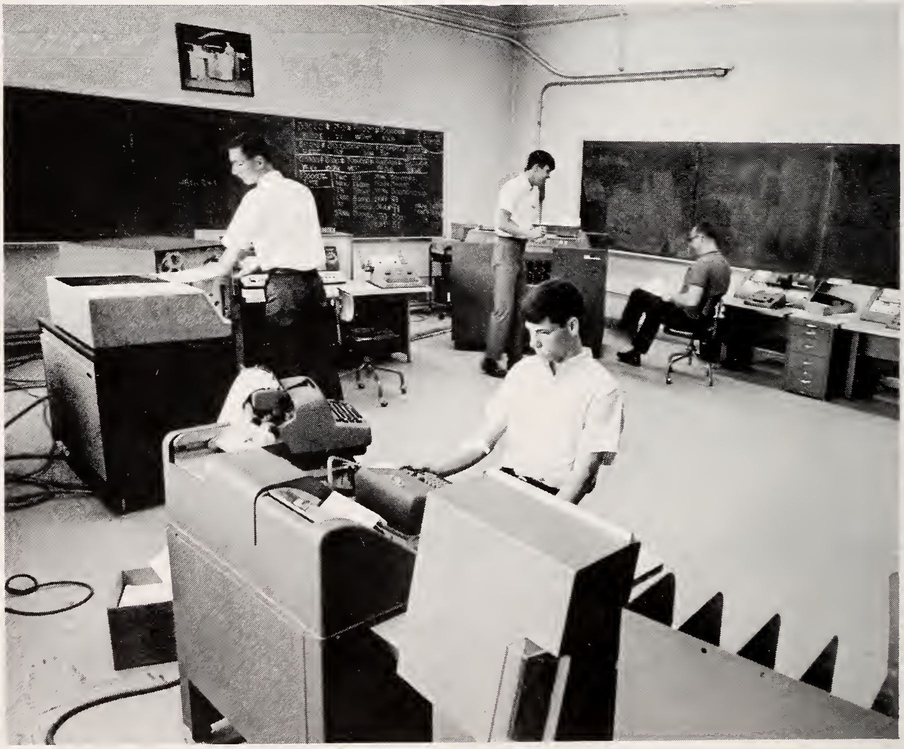
The Accounting curriculum is designed to provide sound academic training in the accumulation and maintenance of accounting. The student learns to perform such duties as: maintaining journals and ledgers, preparing financial statements, making special reports and analyses, preparing cost data and summarizing tax information. The degree Associate in Applied Science in Accounting will be awarded upon successful completion of this curriculum.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR ACCOUNTING

Course	Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
BUS 101	Introduction to Business	3	0	3
BUS 120	Principles of Accounting I	5	2	6
T-ENG 100	Speed Reading	2	0	2
T-ENG 101	Communications I	3	0	3
T-MAT 110	Business Arithmetic	3	0	3
		16	2	17
SECOND QUARTER*				
BUS 115	Business Law I	3	0	3
BUS 121	Principles of Accounting II	5	2	6
MAT 111	Business Mathematics	3	0	3
T-ENG 102	Communications II	3	0	3
		14	2	15
THIRD QUARTER				
BUS 116	Business Law II	3	0	3
BUS 222	Intermediate Accounting I	5	2	6
ECO 201	Economics I	3	0	3
T-BUS 109	Business Machines	2	2	3
T-ENG 103	Communications III	3	0	3
		16	4	18

*T-BUS 102 Typing required of students in second quarter if they have not had one year of high school typing.

Course Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FOURTH QUARTER			
BUS 223 Intermediate Accounting II	5	2	6
ECO 202 Economics II	3	0	3
SPH 101 Oral Communication	3	0	3
T-BUS 123 Business Finance I	3	0	3
T-BUS 247 Business Insurance	3	0	3
	17	2	18
FIFTH QUARTER			
T-BUS 124 Business Finance II	3	0	3
T-BUS 227 Advanced Accounting	3	2	4
T-BUS 229 Income Tax Accounting	3	2	4
T-EDP 104 Introduction to Electronic Data Processing	3	2	4
T-ENG 206 Business Communication	3	0	3
	15	6	18
SIXTH QUARTER			
T-BUS 225 Cost Accounting	3	2	4
T-BUS 266 Budget and Record Keeping	3	0	3
T-BUS 269 Auditing	3	2	4
T-EDP 219 Systems and Procedures	3	0	3
T-PSY 206 Applied Psychology	3	0	3
	15	4	17



Data processing — a tool for today's accountant

BUSINESS ADMINISTRATION

The opportunities in business are increasing in North Carolina. With the growth of population and industrial development in this state, business is becoming more competitive. Businesses are turning to such modern techniques as automation and electronic data processing in order to remain competitive. The best opportunities in business will be filled by students with specialized education in business administration. The graduate of the Business Administration curriculum may enter a variety of career opportunities in such businesses as: advertising, banking, credit, finance, retailing, wholesaling, insurance, transportation, communications, manufacturing and the hotel, tourist and travel industry.

DESCRIPTION OF CURRICULUM

The Business Administration curriculum is designed to prepare the student for employment in several occupations common to business. Training is aimed at preparing the student in many phases of administrative work that are encountered in the average business.

The specific objectives of the Business Administration curriculum are to develop the following competencies: (1) understanding of the principles of organization and management in business control; (2) understanding our economy through study and analysis of the role of marketing, wholesaling, retailing and manufacturing; (3) knowledge in specific elements of accounting, finance and business law; (4) understanding and skill in effective communication for business; (5) knowledge of human relations as they apply to successful business operations in a rapidly expanding economy. With approval of a faculty adviser, students through their choice of fifth and sixth quarter electives may concentrate their studies either in General Business, Marketing or Office Management. The degree Associate in Applied Science in Business Administration is awarded upon completion of this curriculum.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR BUSINESS ADMINISTRATION

Course Title			Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER					
BUS	101	Introduction to Business	3	0	3
SPH	101	Oral Communication	3	0	3
T-BUS	271	Office Management	3	0	3
T-ECO	110	American Economic History	3	0	3
T-ENG	101	Communications I	3	0	3
T-MAT	110	Business Arithmetic	3	0	3
			18	0	18
SECOND QUARTER					
ECO	201	Economics I	3	0	3
MAT	111	Business Mathematics	3	0	3
T-BUS	233	Personnel Management	3	0	3
T-ECO	111	Labor Economics	3	0	3
T-ENG	102	Communications II	3	0	3
			15	0	15

Course Title	Hours per Week		Quarter Hours Credit
	Class	Lab.	
THIRD QUARTER			
ECO 202 Economics II	3	0	3
T-BUS 232 Sales Development	3	0	3
T-BUS 258 Business Statistics	3	0	3
T-BUS 272 Supervision	3	0	3
T-ENG 103 Communications III	3	0	3
T-PSY 206 Applied Psychology	3	0	3
	18	0	18
FOURTH QUARTER			
BUS 115 Business Law I	3	0	3
BUS 120 Principles of Accounting I	5	2	6
T-BUS 219 Credit Procedures and Problems	3	0	3
T-BUS 245 Retailing	3	0	3
T-EDP 104 Introduction to Electronic Data Processing	3	2	4
	17	4	19
FIFTH QUARTER			
BUS 116 Business Law II	3	0	3
BUS 121 Principles of Accounting II	5	2	6
T-BUS 123 Business Finance I	3	0	3
T-BUS 237 Wholesaling	3	0	3
T-EDP 219 Systems and Procedures	3	0	3
	17	2	18
SIXTH QUARTER			
BUS 235 Business Management	4	0	4
SPH 201 Public Speaking	3	0	3
T-BUS 217 Legal Environment of Business	3	0	3
T-BUS 124 Business Finance II	3	0	3
T-BUS 239 Marketing	3	0	3
	16	0	16

TRAFFIC AND TRANSPORTATION

The movement, warehousing and handling of all types of goods by railroad, truck, water or air is the basis for the transportation industry. These industries in single and multi-unit companies are among this area's largest employers. They play a major role in our economic life and through their services keep the industrial-retail-wholesale-agriculture complex functioning on split-second timing.

Services in the field of traffic and transportation are varied. They are performed in such areas as terminal management, rate, tariff and claim personnel; yard, sales and service engineers; packaging and materials handling specialists; and office personnel employed by transportation groups or concerns in the industrial-wholesale-retail-agriculture fields serviced by them. This area offers a large number of opportunities for new employees or for self-study promotion by present employees.

DESCRIPTION OF CURRICULUM

The Traffic and Transportation curriculum at Central Piedmont Community College is modern, practical and complete. When taken on a full-time basis it can be completed in six quarters or in a proportionately longer period of time on a part-time schedule. Related areas of study will provide the student with a more complete insight in ways of dealing with people and in overall business functioning. The Traffic and Transportation curriculum is designed (1) to develop the student's knowledge and understanding of the fundamental and practical aspects dealing specifically in this field; (2) to develop operative skills that will enable the student to progress in an upgrading program within the industry and in an area of his interest; (3) to familiarize the student with the importance of this field, its relationship to other areas and the part which the student can play in the future growth of the field. A graduate in this curriculum will receive the degree Associate in Applied Science in Traffic and Transportation. With approval of a faculty adviser, students may concentrate their studies either in Transportation Management or Traffic Management through choice of electives in the last two quarters.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR TRAFFIC AND TRANSPORTATION

Course		Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER					
SPH	101	Oral Communication	3	0	3
T-BUS	101	Introduction to Business	3	0	3
T-BUS	271	Office Management	3	0	3
T-ECO	106	Economics of Transportation I	3	0	3
T-ENG	101	Communications I	3	0	3
T-MAT	110	Business Arithmetic	3	0	3
			18	0	18
SECOND QUARTER					
ECO	201	Economics I	3	0	3
T-BUS	190	Motor Carrier Rates	3	2	4
T-ECO	111	Labor Economics	3	0	3
T-ENG	102	Communications II	3	0	3
T-MAT	111	Business Mathematics	3	0	3
			15	2	16
THIRD QUARTER					
ECO	202	Economics II	3	0	3
T-BUS	178	Traffic Management	3	2	4
T-BUS	232	Sales Development	3	0	3
T-BUS	272	Supervision	3	0	3
T-ENG	103	Communications III	3	0	3
T-PSY	206	Applied Psychology	3	0	3
			18	2	19
FOURTH QUARTER					
BUS	120	Principles of Accounting I	5	2	6
T-BUS	115	Business Law I	3	0	3
T-BUS	294	Railroad Transportation	3	0	3
T-BUS	296	Motor Carriers: Organization and Operation	3	0	3
T-EDP	104	Introduction to Electronic Data Processing	3	2	4
			17	4	19

Course Title	Hours per Week		Quarter Hours
	Class	Lab.	Credit
FIFTH QUARTER			
BUS 121 Principles of Accounting II	5	2	6
T-BUS 116 Business Law II	3	0	3
T-BUS 285 ICC Law I	3	0	3
T-BUS 295 Traffic Claims	3	0	3
T-EDP 219 Systems and Procedures	3	0	3
	18	2	18
SIXTH QUARTER			
SPH 201 Public Speaking	3	0	3
BUS 235 Business Management	4	0	4
T-BUS 239 Marketing	3	0	3
T-BUS 286 ICC Law II	3	0	3
T-BUS 297 Motor Carriers: Problems and Practices	3	0	3
	16	0	16

Explanation of Course Listings

Sample course listing:

BUS 120 Accounting I **F,W,S,SS** **(5–2)** **6**

The three capitalized letters and the number which follows (BUS 120) are the abbreviated designation used for the course (Accounting I). The F,W,S,SS indicate that the course is offered during the Fall, Winter, Spring and Summer Session Quarters each year. If the words "even" or "odd" had followed, the course would be held only every other year. The year offered is determined by the last digit in the year. This offering may be made in either day or evening classes.

The (5–2) means that the class has five hours of lecture and two hours of laboratory work per week. The "6" at the end indicates the number of credit hours for completion of the course.

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

BUS 101 Introduction to Business **F,W,S,SS** **(3–0)** **3**

A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. Choosing a location and product line, design, production, sales and personnel staffing are topics studied.

BUS 115 Business Law I **F,W,S,SS** **(3–0)** **3**

A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered whenever applicable.

BUS 116 Business Law II **F.W.S.SS** **(3–0)** **3**

A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 115.

BUS 120 Principles of Accounting I F,W,S,SS (5–2) 6

Introductory accounting principles designed to provide an understanding of accounting data. Accumulating, summarizing, analyzing and reporting information about service and mercantile enterprises are emphasized. Individual ownerships and partnerships are the business organizations stressed. Also included is a study of payrolls and payroll taxes.

BUS 121 Principles of Accounting II F,W,S,SS (5–2) 6

Emphasis is placed on recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The corporate form of business is studied. P.R. BUS 120.

BUS 222 Intermediate Accounting I F,S (5–2) 6

An introduction to and review of fundamental processes of accounting. Emphasis is placed upon a thorough working knowledge and understanding of financial statements. Individual items in the balance sheet and income statement are analyzed and evaluated. P.R. BUS 121.

BUS 223 Intermediate Accounting II W,SS (5–2) 6

A continuation of the study begun in BUS 222. The application of accounting principles and concepts to account evaluation and income determination is emphasized. Special problems peculiar to corporations and analyses of financial reports are considered. P.R. BUS 222.

BUS 235 Business Management F,W,S,SS (4–0) 4

A study in depth of the principles of management. The major functions of planning, organizing, staffing, directing and controlling a firm's operations are carefully organized. Case studies and own company analysis are integral parts of the course.

ECO 201 Economics I F,W,S,SS (3–0) 3

Basic economics with attention to control problems of price, competition and money; supply and demand; business organization; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

ECO 202 Economics II F.W.S.SS (3–0) 3

Historical development of economic thought; creation of money; banking and the Federal Reserve System; monetary and fiscal policy; price, utility and costs in selected industries; competition and monopoly.

ECO 203 Economics III F,W,S,SS (3–0) 3

Distribution of income, factors of production; wages and collective bargaining; interest and capital; profits and incentives; international payments, trade and gold flow; current economic problems. P.R. ECO 201.

HIS 152 American History II W,S (3–0) 3

The intermediate survey of the American development from 1800 to 1899.

MAT 111 Business Mathematics F,W,S,SS (3–0) 3

Mathematics applied to business. An introduction to statistical methods, simple and compound interest, discounts and expense distribution calculations.

SPH 101 Oral Communication F,W,S,SS (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

SPH 201 Public Speaking F,W,S,SS (3–0) 3

Study of the mechanics of speaking before an audience; adaptation of method of purpose; practice in different types of speeches, such as extemporaneous, impromptu, prepared, and memorized. P.R. SPH 101 or consent.

T-BUS 102 Elementary Typewriting I F,W,S,SS (2–3) 3

An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

T-BUS 109 Business Machines F,S (2–2) 3

A general survey of business and office machines to develop a working knowledge of ten-key and full-keyboard adding machines, printing calculator and duplicating equipment.

T-BUS 123 Business Finance I F,W,S,SS (3–0) 3

The financing of business units as individuals, partnerships, corporations and trusts. Financial instruments and capital structure, procuring funds, managing working capital and managing corporate capitalization are studied in detail. P.R. BUS 120.

T-BUS 124 Business Finance II F,W,S (3–0) 3

A continued and more concentrated study of the different kinds of stocks and bonds, mortgages, working capital, sinking funds, capitalization, sale of securities, surplus and dividends. Particular emphasis placed on management and control. P.R. T-BUS 123.

T-BUS 178 Traffic Management F,S (3–2) 4

Management of the flow of goods in commerce. The organization and duties of a traffic department, study of services offered by common carriers, freight classifications, tariff and rate formulation, shipping documents, routing and consolidations are studied.

T-BUS 179 Advanced Traffic Management F,W (3–0) 3

A continuation of T-BUS 178, stressing analysis of carriers' special services, transit privileges, equipment utilization, management of private transportation, exports and imports, warehousing, procedures before classification and rate committees, technical tariff interpretations, contracts and cargo insurance. P.R. T-BUS 178.

T-BUS 190 Motor Carrier Rates W,S,SS (3–2) 4

This is a problem approach to the study of motor carrier rates and charges. Emphasis is placed on tariffs published by the Southern Motor Carriers Rate Conference and rules of the governing classifications.

T-BUS 191 Common Carrier Rates SS (3–0) 3

Advanced tariff problems of SMCRC and other motor-carrier rate bureaus are considered. A study is made of rail rates and rail trailer-on-flat-car rates. Problems are also discussed. P.R. T-BUS 190.

T-BUS 217 Legal Environment of Business F,W,S,SS (3–0) 3

A study of the powers, policies, methods and procedures used by federal and state administrative agencies in promoting and regulating business enterprises. The course includes a consideration of the constitutional and statutory limitations on these commissions and judicial review of administrative action. P.R. BUS 116.

T-BUS 219 Credit Procedures and Problems W,S,SS (3–0) 3

The management of a credit department based on principles and practices in the extension of credit and collection of accounts. Federal and state laws pertaining to credit extension and collection are included.

T-BUS 225 Cost Accounting W,S (3–2) 4

A detailed study of systems of cost accounting including process, job orders and standard costs. Usefulness of data to management is stressed. P.R. T-BUS 227.

T-BUS 227 Advanced Accounting F,S (3–2) 4

Advanced accounting theory and principles as applied to special accounting problems, bankruptcy proceedings, estates, trusts and parent and subsidiary accounting. P.R. BUS 223.

T-BUS 229 Income Tax Accounting F,S (3–2) 4

A study of federal and state taxes as applied to individuals and various types of business organizations. Topics include the application of tax laws to income, property and business taxes. P.R. BUS 120.

T-BUS 232 Sales Development F,W,S,SS (3–0) 3

An analysis of the principles and techniques of effective selling. The qualifications, training and obligations of the salesman are emphasized through sales demonstrations and interviews.

T-BUS 233 Personnel Management F,W,S,SS (3–0) 3

An introduction to the operation of a personnel department. Emphasis is placed on the scientific management of manpower through personnel policies pertaining to recruitment, selection, placement, training, promotion, health and safety and employee services.

T-BUS 237 Wholesaling F,W,S,SS (3–0) 3

A comprehensive analysis of the wholesaling function emphasizing the principles and techniques employed by today's wholesale managers. The role of wholesaling in our distribution system and its relation to production and retailing are thoroughly analyzed.

T-BUS 239 Marketing F,W,S,SS (3–0) 3

An introduction to the overall system of distributing goods and services. The course deals with marketing functions and policies, product line, brands, channels of distribution, advertising and price policies.

T-BUS 245 Retailing F,W,S,SS (3–0) 3

A study of the role of retailing in our distribution system. Topics include the development of present retail practices, functions performed, principles governing effective operation, and managerial problems resulting from current economic and social trends.

T-BUS 247 Business Insurance W,SS (3–0) 3

A presentation of the basic principles of risk insurance and their application. A survey of the various types of insurance is made. A detailed study is made of the basic insurance contracts, including endorsements, forms and clauses. P.R. BUS 116.

T-BUS 258 Business Statistics W,S (3–0) 3

A study of the principal statistical methods and their application to business operations. The course deals with collection of statistical data, construction and interpretation of statistical tables and charts. Attention is given to fundamental statistical concepts and techniques. P.R. MAT 111.

T-BUS 266 Budget and Record Keeping F,W,S,SS (3–0) 3

The basic principles, methods and procedures for projection, preparation and operation of business budgets. Special attention is given to the involvement of individual departments and the role they play. Emphasis is placed on the necessity for accurate record keeping in order to evaluate the effectiveness of budget planning. P.R. BUS 120.

T-BUS 269 Auditing F,S (3–2) 4

Theory and practices of auditing are emphasized, including standards, procedures and rules of professional conduct. Emphasis is placed on detailed audits, internal auditing and internal control. P.R. Advanced standing.

T-BUS 271 Office Management F,W,S,SS (3–0) 3

This course presents the fundamental principles and successful practices used in getting office work accomplished. Case problems are used in making effective solutions to office management problems.

T-BUS 272 Supervision F,W,S,SS (3–0) 3

A study of the critically important and practical concepts of modern-day, first-line supervision. Emphasis is placed on the supervisor's major functions, his face-to-face relations with others, and his intellectual, emotional and ethical development.

T-BUS 285 ICC Law I F,SS (3–0) 3

A thorough analysis is made of the Interstate Commerce Act. The history of this Act, court cases interpreting it, and related acts affecting interstate commerce are studied.

T-BUS 286 ICC Law II F,W (3–0) 3

A detailed study of the procedure of appearing and presentation of cases before the Interstate Commerce Commission. The various causes of action arising in violation or application of the law are studied. T-BUS 285-6 are designed to assist the student in passing the ICC practitioners examination.

T-BUS 287 ICC Law III W,S (3–0) 3

Presentation of cases before the Interstate Commerce Commission. P.R. T-BUS 286.

T-BUS 294 Railroad Transportation SS (3–0) 3

A survey of the development, ownership, and control of railroads. Organization of the Association of American Railroads, its duties and function. Railroad systems, services, equipment, car service, per diem and interchange rules, trailer-on-flatcar and other rail-motor services. Railroad publications and their uses are also considered.

T-BUS 295 Traffic Claims F,W,S (3–0) 3

A comprehensive analysis of rights and liabilities of common carriers, consignors and consignees, claim procedures, settlements, and prevention of loss and damage claims.

T-BUS 296 Motor Carriers: Organization and Operation F,SS (3–0) 3

A study of the development of the motor carrier industry, classification of highway users, types of motor carriers, types of operations and services performed; state and federal safety regulations, highway policies and "barriers"; organization and operation of a motor carrier; terminals, terminal facilities, types of equipment and costs, insurance, financing and labor relations.

T-BUS 297 Motor Carriers: Problems and Practices F,W (3–0) 3

An analysis of motor carrier administration including organization, management principles, and policy formulation for direction and control. Case problems are studied. P.R. T-BUS 296.

T-ECO 106 Economics of Transportation I F,S,SS (3–0) 3

An introductory course emphasizing our transport development from earliest times to 1925. Water transportation, toll roads and railroads are analyzed together with the economic effects of early government regulation.

T-ECO 107 Economics of Transportation II W (3–0) 3

A continuation of T-ECO 106, covering the economics of our present complex system of air, motor, rail, water and pipeline transportation. Emphasis is given to cost of service factors, and the advantages and disadvantages of each mode. A final tie-in is made to present conditions with analysis of proposals for coordination and integration of our different modes of transportation. P.R. T-ECO 106.

T-ECO 110 American Economic History F,S (3–0) 3

Survey of American economic development; emphasis on agriculture, commerce, finance, transportation and communication, and the labor movement.

T-ECO 111 Labor Economics W,SS (3–0) 3

Current labor problems and theories; the labor market; the development of labor unions; wage theories and the development of effective labor and wage policies.

T-EDP 104 Introduction to Electronic Data Processing F,W,S,SS (3–2) 4

The fundamental concepts and principles of data processing systems are presented as an aid in developing the basic knowledge prerequisite for a future detailed study of computer systems and programming. This course provides a general knowledge of computer systems, data processing terminology, computer applications, flow charting, types of computer instructions and programming in basic language.

T-EDP 219 Systems and Procedures F,W,S,SS (3–0) 3

An introductory course in the principles of management systems applied to information data flows. Particular attention is given to forms flow charting, forms analysis and design and systems analysis. P.R. Approval of department.

T-EDP 220 Applied Business Systems W (3–0) 3

A continuation of management systems applied to information data flow. Practical work in systems flow charting and analysis is emphasized. The conducting of feasability studies, the preparation and maintenance of standard practice, policy, and organization manuals, and computer applications are stressed. P.R. T-EDP 219.

T-ENG 100 Speed Reading F,W,S,SS (2–0) 2

The approach includes a concentrated effort to improve the student's ability to comprehend that which he reads with greater rapidity and accurateness. Special procedures are used to broaden the span of sentence recognition, to increase eye coordination and to improve the common faults of a slow reader.

T-ENG 101 Communications I F,W,S,SS (3–0) 3

This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as a functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English.

T-ENG 102 Communications II F,W,S,SS (3–0) 3

Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. T-ENG 101.

T-ENG 103 Communications III F,W,S,SS (3–0) 3

The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. T-ENG 102.

T-ENG 206 Business Communication F,S,SS (3–0) 3

This course develops skills in techniques used in writing business communications. Emphasis is placed on writing effective letters and reports. Action-getting sales letters involving credit, collections, adjustments, complaints, orders, acknowledgements and remittances are covered. P.R. T-ENG 101, T-BUS 102 or equivalent.

T-MAT 110 Business Arithmetic F,W,S,SS (3–0) 3

A study of fundamental processes: addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent and per cents as applied to the income statement are also studied. P.R. Satisfactory score on entrance math test.

T-PSY 206 Applied Psychology F,W,S,SS (3–0) 3

A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

ELECTIVES

T-BUS 220 Money and Banking F (3–0) 3
A study of the principles of commercial and central banking; monetary and income theory; monetary and fiscal policy; and international monetary relations.

T-BUS 234 Commodities of Commerce SS even (3–0) 3
A study of economic geography of the principal commodities of commerce. The prime sources of raw materials and finished goods under present conditions are emphasized and an analysis of major changes as projected by industrial and commercial development is made.

T-BUS 238 Purchasing W (3–0) 3
The organization of industrial and commercial purchasing, methods of procurement, purchasing policies, sources of supply and legal aspects. P.R. T-BUS 239.

T-BUS 248 International Marketing S (3–0) 3
Covers the full range of activities, problems and decision-making areas which challenge the firm engaged in or embarking upon importing or exporting its products in foreign countries.

T-BUS 249 Sales Management F (3–0) 3
The planning, organizing and controlling of sales operations. Emphasis is placed on the sales manager's functions and problems in manufacturing. P.R. Fifth Quarter Status.

T-BUS 254 Job Analysis and Evaluation W (3–0) 3
Utilization of time standards in design, installation and operation of financial, incentive plans. Grading, ranking, factor comparison and point systems of job evaluation in determining equitable rates based on job content.

T-BUS 255 Financial Statement Analysis SS (3–0) 3
A study based on how to read, analyze and interpret financial statements of industrial and commercial business enterprises. Although it is assumed that the student knows fundamental accounting principles, some of the basic concepts are reviewed. Emphasis is placed on presenting and discussing methods and principles of analysis and the process of interpreting financial and operating reports.

T-BUS 298 Materials Handling S (3–0) 3
A study of basic containers and equipment, packaging and material protection, standardization, warehousing, traffic and shipping. The various analytical approaches used in formulating materials-handling improvements in existing or proposed operations are covered.

T-CAT 101 Advertising Principles S (3–0) 3
A comprehensive survey of the history and development of advertising and a discussion of its economic and social values. An introduction to advertising media and current publications in the field.

T-MEC 213 Production Planning W (3–0) 3
Day-to-day plant direction including forecasting, product planning and control, scheduling, dispatching, routing and inventory control. Case histories are discussed in the classroom and courses of corrective action are developed.

COMMERCIAL ART AND ADVERTISING DESIGN

Artists are needed by business and industry in ever-increasing numbers. Advertising agencies, design studios, exhibit and display businesses, department stores, industrial organizations and publishing houses are some of the many areas where the skills of the artist and designer are utilized. Many trained individuals choose to "free-lance" or perform services for customers on self-made contracts and schedules. The field of Commercial Art and Advertising Design is constantly growing and offers the successful artist excellent rewards in employment through creative achievement. Areas of employment include advertising layout and design, lettering and sign painting, displays and exhibits, animation and cartooning, technical illustration, book and magazine illustration, fashion illustration, painting, sketching and textile design.

DESCRIPTION OF CURRICULUM

The curriculum at Central Piedmont Community College is designed to offer the student sound, well-rounded training. Special attention is given to basic art and design principles, the development of original thinking and actions based upon contemporary needs in this field. Through individual counseling, lectures, laboratories and field trips, each student is encouraged to pursue high standards of excellence in preparation for employment. Graduates receive the degree Associate in Applied Science in Commercial Art and Advertising Design.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR COMMERCIAL ART AND ADVERTISING DESIGN

Course Title		Hours per Week		Quarter Hours Credit
		Class	Lab.	
FIRST QUARTER				
DFT 101	Technical Drafting I	2	4	3
T-ENG 101	Communications I	3	0	3
T-CAT 101	Advertising Principles	3	0	3
T-CAT 105	Life Study I	1	3	2
T-CAT 121	Commercial Art and Advertising Design I	3	9	6
T-ENG 100	Speed Reading	2	0	2
		14	16	19
SECOND QUARTER				
T-ENG 102	Communications II	3	0	3
T-DFT 102	Technical Drafting II	2	4	3
T-MAT 110	Business Arithmetic	3	0	3
T-CAT 106	Life Study II	0	6	2
T-CAT 122	Commercial Art and Advertising Design II	3	9	6
		11	19	17
THIRD QUARTER				
T-ENG 103	Communications III	3	0	3
T-CAT 116	Photography I	2	6	4
T-CAT 123	Commercial Art and Advertising Design III	3	9	6
MAT 111	Business Mathematics	3	0	3
	Elective *	3	0	3
		14	15	19
FOURTH QUARTER				
SPH 101	Oral Communication	3	0	3
T-CAT 205	Advertising Copywriting	3	0	3
T-CAT 212	Advertising Illustration I	1	3	2
T-CAT 224	Commercial Art and Advertising Design IV	3	9	6
T-CAT 110	Industrial Illustration	2	6	4
		12	18	18

Course Title		Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIFTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
T-CAT 213	Advertising Illustration II	1	3	2
T-CAT 217	Photography II	2	6	4
T-CAT 225	Commercial Art and Advertising Design V	3	9	6
	Elective *	3	0	3
		12	18	18
SIXTH QUARTER				
ECO 201	Economics I	3	0	3
T-CAT 214	Advertising Illustration III	1	3	2
T-CAT 226	Commercial Art and Advertising Design VI	3	9	6
T-CAT 235	Advertising Art Direction	5	0	5
	Elective *	3	0	3
		15	12	19

* To be approved by Commercial Art Department

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

DFT 101 Technical Drafting I (2–4) 3

An introduction to drafting and design practices and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing, and storing drawings are studied and the student is introduced to "working drawings".

ECO 201 Economics I (3–0) 3

Basic economics with attention to central problems of price, competition and money; supply and demand; business organization; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

SPH 101 Oral Communication (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversations, interviews, and conferences.

T-CAT 101 Advertising Principles (3–0) 3

A comprehensive survey of the history and development of advertising and a discussion of its economic and social values. An introduction to advertising media and current publications in the field.

T-CAT 105 Life Study I (1–3) 2

A study of body structure with emphasis on the skeletal and muscular systems, movement and the aging process. Graphical interpretation and response to live models with emphasis on proportioning, masses and movement.

T-CAT 106 Life Study II (0–6) 2

Graphical interpretation and response to the live model covering topics such as proportioning, the aging process, character, expression, and draping the model. This course deals with building of the figure and such ingredients as placement, balance, rhythm, turning, twisting, wedging, distribution of masses, perspective of form, planes of forms, abdominal arch, hair forms and variations. P.R. T-CAT 105.

T-CAT 110 Industrial Illustration (2–6) 4

A comprehensive approach to the tools, equipment, materials and utilization of the illustration. Laboratory exercises and problems covering such topics as product illustrations, production illustrations, renderings, preparation of visual charts, graphs and composites. P.R. T-DFT 102.

T-CAT 116 Photography I (2—6) 4

An introduction to the field of photography, photographic equipment and materials. A study of the fundamental techniques of the camera and its expressive possibilities in relation to the field of design and visual communications. Assigned camera projects, darkroom procedures and equipment.

T-CAT 121 Commercial Art and Advertising Design I (3—9) 6

An introduction to drawing and basic design fundamentals and principles. Emphasis is placed on line, two- and three-dimensional shapes, letter indication, sketching, perspective, light and shade, equipment and materials of the art and design profession.

T-CAT 122 Commercial Art and Advertising Design II (3—9) 6

Advanced material in drawing, basic design, lettering equipment and materials. Emphasis is placed on two- and three-dimensional form, perspective, sketching, rough and finished lettering. Laboratory work consists of assigned graphical problems with critique and discussion by class participation. P.R. T-CAT 121.

T-CAT 123 Commercial Art and Advertising Design III (3—9) 6

Introduction to layout and design for printing. Mechanics of layout, properties of type and basic reproductive processes. Laboratory exercises consist of preparation of comprehensive art form for presentation on magazine covers, trademarks, book covers, textile designs, furniture designs and two- and three-dimensional display figures. Assigned graphical problems with critique and discussion by class members. P.R. T-CAT 122, T-DFT 102.

T-CAT 205 Advertising Copywriting (3—0) 3

A study of the techniques used in creating effective advertising copy for various types of media. The purpose and duties of the copywriter and legal problems encountered in copywriting are emphasized. Theory and practice are given in writing copy for the various media such as retail and fashion copy, mail order, direct mail, business publications, radio and television. P.R. T-ENG 103.

T-CAT 212 Advertising Illustration I (1—3) 2

An introduction to advertising illustration through problems in shape, space and light analysis. Laboratory exercises will explore the use of various mediums. P.R. T-CAT 123.

T-CAT 213 Advertising Illustration II (1—3) 2

Advanced work and assigned problems in advertising illustration. The student is urged to explore a variety of mediums. P.R. T-CAT 212.

T-CAT 214 Advertising Illustration III (1—3) 2

Assigned problems in advanced illustration. Emphasis is placed on originality and the readiness of the student to explore assigned graphical tasks and problems. P.R. T-CAT 213.

T-CAT 217 Photography II (2—6) 4

Advanced photographic techniques and materials. Participation in studio and laboratory procedures illustrating the various applications and creative possibilities of photography in advertising. P.R. T-CAT 116.

T-CAT 224 Commercial Art and Advertising Design IV (3—9) 6

An introduction to cartooning, intermediate layout and design, techniques for printing. Laboratory assigned graphical problems cover such topics as color separation, halftones, and materials for the development of posters, show cards, banners, hand-lettered documents, brochures and folders. P.R. T-CAT 123.

T-CAT 225 Commercial Art and Advertising Design V (3—9) 6

Advanced problems in layout and design techniques for printing, illustration, cartooning, display design and lettering. Laboratory and graphic problems dealing with magazine and book illustrations, the fashion figure, outdoor sign writing, displays and exhibits for business and industry. P.R. T-CAT 224.

T-CAT 226 Commercial Art and Advertising Design VI (3—9) 6

A course providing simulated professional working conditions utilizing advanced layout and design techniques for printing. Each student explores a variety of problems and presents his solutions for general class critique and discussion. The climax of the course is a review and presentation of the student's individual portfolio of professional work. P.R. T-CAT 225.

T-CAT 235 Advertising Art Direction (5–0) 5
A study of the techniques used in creating effective advertising for various types of media. Physical considerations of the advertisement such as size, position, color, frequence of insertion, layout, coupons and inquiries are considered. Analysis of techniques to cases in national, retail, mail order, industrial and professional advertising with consideration given to budgetary practices. P.R. T-CAT 101, T-CAT 225.

T-DFT 102 Technical Drafting II (2–4) 3
The application of orthographic projection principles to the more complex drafting problems, primary and secondary auxiliary views, simple and successive revolutions, and sections and conventions is studied. The introduction of the graphical analysis of space problems involving points, lines, planes and a combination of these elements. Precision and limit dimensioning practices. P.R. DFT 101.

T-ENG 100 Speed Reading (2–0) 2
The approach includes a concentrated effort to improve the student's ability to comprehend that which he reads with greater rapidity and accurateness. Special procedures are used to broaden the span of sentence recognition, to increase eye coordination and to improve the common faults of a slow reader.

T-ENG 101 Communications I (3–0) 3
This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as a functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English.

T-ENG 102 Communications II (3–0) 3
Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. T-ENG 101.

T-ENG 103 Communications III (3–0) 3
The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. Writing techniques of structure and syntax are emphasized. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. T-ENG 102.

T-MAT 110 Business Arithmetic (3–0) 3
A study of fundamental processes: addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent and per cents as applied to the income statement are also studied. P.R. Satisfactory score on entrance math test.

T-MAT 111 Business Mathematics (3–0) 3
Mathematics applied to business. An introduction to statistical methods, simple and compound interest, discounts and expense distribution calculations.

T-PSY 206 Applied Psychology (3–0) 3
A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

DENTAL HYGIENE

The dental hygienist usually is a young lady meeting college entrance standards, attaining an above average position in her graduating class and earning a creditable score on several batteries of tests. In her quest for a professional career she is prepared for health services rich in human contacts. She achieves satisfaction from helping others and gains security in an expanding and highly regarded profession as a necessary member of the dental health team. Her duties are myriad and her responsibilities challenging.

DESCRIPTION OF CURRICULUM

The curriculum at Central Piedmont Community College includes a background of basic studies, specialized instruction and directed experience. The dental hygiene student will cultivate the judgment and skill prerequisite to providing to the public oral health care under the supervision of the dentist within the limits of the ethics and laws of the state.

The students receive instruction in general anatomy and physiology, histology, pathology, chemistry, bacteriology, hygiene, public health, dental anatomy, nutrition, pharmacology, first aid, dental health education, ethics and jurisprudence, economics, speech, English composition, sociology, psychology, dental materials, radiology, human relations, records, clinical dental hygiene and general education electives.

The curriculum is accredited by the American Dental Association Council on Dental Education and must also satisfy the educational, professional, ethical and legal standards of the American Dental Association Council on Dental Education, the North Carolina State Department of Community Colleges, the North Carolina State Board of Dental Examiners, the American Dental Hygienists Association, the North Carolina Dental Society and the North Carolina Dental Hygienists Association. Graduates in this curriculum receive the degree Associate in Applied Science in Dental Hygiene.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR DENTAL HYGIENE

Course Title			Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER					
ENG	101	English Composition I	3	0	3
T-DEN	102	Dental Anatomy I	2	6	5
BIO	110	Human Anatomy and Physiology	4	2	5
T-DEN	215	Preventive Dentistry I	2	0	2
			11	8	15
SECOND QUARTER					
ENG	102	English Composition II	3	0	3
T-DEN	103	Dental Anatomy II	2	6	5
BIO	111	Human Anatomy and Physiology	4	2	5
T-DEN	216	Preventive Dentistry II	2	0	2
T-PSY	112	Personality Development	3	0	3
			14	8	18
THIRD QUARTER					
ENG	103	English Composition III	3	0	3
BIO	150	General Bacteriology	4	2	5
T-CHM	150	Chemistry	4	2	5
SPH	101	Oral Communication	3	0	3
T-DEN	104	Dental Hygiene I	1	7	3
			15	11	19

Course Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FOURTH QUARTER			
T-DEN 214 Office Emergencies	2	0	2
T-DEN 108 Dental Materials	3	4	4
T-DEN 217 Preventive Dentistry III	3	0	3
PSY 201 General Psychology	5	0	5
T-DEN 105 Dental Hygiene II	0	13	4
T-DEN 109 Roentgenology	2	0	2
	15	17	20
FIFTH QUARTER			
T-DEN 207 Pharmacology	3	0	3
T-DEN 201 Dental Hygiene III	0	17	5
T-DEN 218 Preventive Dentistry IV	2	0	2
T-DEN 206 Embryology and Histology	4	2	5
ECO 201 Economics I	3	0	3
	12	19	18
SIXTH QUARTER			
T-DEN 213 Pathology	3	0	3
T-DEN 110 Head and Neck Anatomy	2	0	2
T-DEN 106 Nutrition	3	0	3
PSY 202 Human Development	5	0	5
T-DEN 202 Dental Hygiene IV	0	17	5
	13	17	18
SEVENTH QUARTER			
SOC 201 Introduction to Sociology	5	0	5
T-DEN 107 First Aid	2	0	2
T-DEN 203 Dental Hygiene V	0	20	6
T-DEN 212 Practice Administration	3	0	3
	10	20	16

COURSE DESCRIPTIONS

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BIO 110 Human Anatomy and Physiology I (4–2) 5

A study of the structure and normal functions of the human body and its systems with emphasis upon the inter-related functions of various parts and systematic processes in the development of basic physiological principles.

BIO 111 Human Anatomy and Physiology II (4–2) 5

A continuation of BIO 110. P.R. BIO 110.

BIO 150 General Bacteriology (Microbiology) (4–2) 5

An introductory course in general bacteriology with a survey of microscopical plant and animal forms with emphasis upon the morphology, physiology and ecology of bacteria. The nature and activities of common microorganisms of humans, soil, water, food and milk. P.R. BIO 101.

ECO 201 Economics I (3–0) 3

Basic economics with attention to central problems of price, competition and money; supply and demand; business organization; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

ENG 101 English Composition I (3–0) 3

Study of expository writing with analysis of methods of development; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods.

ENG 102 English Composition II (3–0) 3

Continuing study of composition, emphasizing the techniques of analysis and synthesis in writing, with short stories and novels providing substance. P.R. ENG 101, or consent.

ENG 103 English Composition III (3–0) 3
Intensive study of composition, emphasizing the critical reading of verse and drama and leading into the basic techniques in researching a topic and writing a documented paper. P.R. ENG 102, or consent.

PSY 201 General Psychology I (5–0) 5
A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements, and theories of psychology.

PSY 202 Human Development (5–0) 5
Development of the normal child and adolescent, with consideration of the social, biological and cultural influences upon growth. P.R. PSY 201.

SOC 201 Introduction to Sociology (5–0) 5
An analysis of the society and culture dealing with social organization, control institutions, stratification and social change.

SPH 101 Oral Communication (3–0) 3
Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

T-CHM 150 Chemistry (4–2) 5
Basic chemistry is introduced briefly to aid the student in understanding the organic and biological phases which follow. Emphasis is placed upon those areas of chemistry involved in normal and abnormal cell functions. Various chemicals of the body are studied as they relate to specific physiological processes. Mathematical computations are limited to those necessary to understand laboratory reports and develop a concept of the quantitative nature of chemistry.

T-DEN 102 Dental Anatomy I (2–6) 5
Structural formation and anatomy of the teeth, eruption data, and gross structure of supporting tissues with emphasis on comparative anatomy. Attention is given to the reproduction of tooth forms by drawing.

T-DEN 103 Dental Anatomy II (2–6) 5
A continuation of T-DEN 102 with study given to structure, eruption data, and comparative dental anatomy of deciduous teeth. A specifically detailed study of occlusion and the manual carving of teeth in wax are also included. P.R. T-DEN 102.

T-DEN 104 Dental Hygiene I (1–7) 3
A study of the techniques of oral prophylaxis as performed within legal limits by the dental hygienist. Clinical practice upon other students and manikins sufficient to render the student competent to perform dental prophylaxis is included. A study is made of the factors which contribute to a healthy condition of the mouth with special attention given to the measures employed to arrest dental caries and adjacent tissue degeneration. The course includes chairside instruction in the dental health of the patient. P.R. T-DEN 103, T-DEN 216.

T-DEN 105 Dental Hygiene II (0–13) 4
A continuation of Dental Hygiene I.

T-DEN 106 Nutrition (3–0) 3
The basic principles of nutrition in relation to health and disease. A consideration of diet in reference to body tissues in general and teeth in particular is included.

T-DEN 107 First Aid (2–0) 2
Consideration of causes of accidents; safeguards against accidents; first aid as a preventive measure; administration of first aid promptly and intelligently when emergency demands.

T-DEN 108 Dental Materials and Procedure (3–4) 4
A study of the composition and source of materials employed in dentistry and their behavior under various treatments. The dental hygiene student learns through lectures, demonstrations and laboratory exercises to identify and prepare these materials for any of the routine dental procedures in the general practice of dentistry and in the specialties of the dental profession.

T-DEN 109 Roentgenology (2–0) 2
A study of the theories and methods for exposing and processing roentgenograms. Sufficient clinical practice methods included in the program to render the student competent to perform these tasks.

T-DEN 110 Head and Neck Anatomy (2—0) 2
A detailed study of the musculature, blood and nerve supply of the head and neck, reviewing the bones, landmarks, sinuses and foramina of the skull. P.R. BIO 111.

T-DEN 201 Dental Hygiene III (0—17) 5
A continuation of Dental Hygiene II.

T-DEN 202 Dental Hygiene IV (0—17) 5
A continuation of Dental Hygiene III.

T-DEN 203 Dental Hygiene V (0—20) 6
A continuation of Dental Hygiene IV.

T-DEN 206 Embryology and Oral Histology (4—2) 5
An introductory study of cells, tissues, and organic structures with particular reference to the teeth and oral structures. The use of the microscope and the examination of slides and tissues are included. P.R. BIO 110, BIO 111, BIO 112, T-CHM 150.

T-DEN 207 Pharmacology (3—0) 3
A study of drugs by groups, with special consideration of those used in dentistry, including physical and chemical properties, dosage and therapeutic effects. P.R. T-CHM 150, BIO 111.

T-DEN 212 Practice Administration (3—0) 3
The study of the correct management of a dental practice. It is stressed that dentistry is not only a profession but also a business which concerns itself with right relations with the patient, with other dentists and physicians and with the keeping of adequate service and financial records. The importance of personal and public relations, economics, and community and social relations is included. P.R. Sixth quarter standing.

T-DEN 213 Pathology (3—0) 3
An introduction to general pathology, with consideration of the more common diseases affecting the human body. The clinical pathology of the diseases affecting teeth and their supporting structures, including consideration of oral manifestations of selected systemic disturbances, is studied. P.R. T-DEN 205.

T-DEN 214 Office Emergencies (2—0) 2
Enumeration, description, symptoms and treatment of the various crises that could arise in the dental office. Included are detailed explanations of the more common emergencies and demonstrations of methods that may be used in their treatment. P.R. T-DEN 207, T-DEN 107, T-CHM 150.

T-DEN 215 Preventive Dentistry I (2—0) 2
The preservation and improvement of health in the community through improving personal habits and conditions of the individual and community. This includes emphasis upon the problems of individual health through an analysis of the various forces which affect the human organism, and the application of scientific facts and principles to these forces.

T-DEN 216 Preventive Dentistry II (2—0) 2
A survey of the theory and practice of preventive dentistry with emphasis upon the principles and problems of community dental health.

T-DEN 217 Preventive Dentistry III (3—0) 3
Methods and materials used in teaching dental health in schools, in public health institutions, in industry and in dental practice; uses of statistical, visual and auditory aids; records and reports. P.R. Fourth quarter standing.

T-DEN 218 Preventive Dentistry IV (2—0) 2
A continuation of Preventive Dentistry III. This course describes the various stages of prevention with explanation of the manner in which dentists can encounter any stage and practice prevention. Study is also given to ethics and jurisprudence in relationship to the public and fellow team workers.

T-PSY 112 Personality Development (3—0) 3
The course is designed to help the student recognize the importance of the physical, intellectual, social and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

ELECTRONIC DATA PROCESSING

Business Data Processing

Scientific Data Processing

Data Processing is one of the fastest growing of the new occupations developing in our rapidly changing technological society. This relatively new occupation offers unlimited opportunities for technicians with good backgrounds in this highly specialized field.

The occupational field of data processing offers a wide variety of activity with specialization possible in many of the areas. The industrial and business hierarchy includes systems and numerical analysts, programmers, coders and machine operators.

DESCRIPTION OF CURRICULA

The curricula offered in Business and Scientific Data Processing at Central Piedmont Community College are designed to develop an individual with the academic background necessary for analyst procedures. A modern and well-equipped computer center, containing a complete computer system, gives ample opportunity for students to learn techniques as well as write programs. Graduates will receive the degree Associate in Applied Science in either Business or Scientific Data Processing.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR ELECTRONIC DATA PROCESSING: BUSINESS

Course	Title	Hours per Week		Quarter Hours Credit
		Class	Lab.	
FIRST QUARTER				
T-ENG 101	Communications I	3	0	3
T-MAT 101	Technical Mathematics I	5	0	5
BUS 101	Introduction to Business	3	0	3
T-EDP 101	Functional Wiring Principles	2	3	3
T-EDP 104	Introduction to Electronic Data Processing	3	2	4
		16	5	18
SECOND QUARTER				
T-ENG 102	Communications II	3	0	3
T-MAT 102	Technical Mathematics II	5	0	5
T-EDP 106	Business Programming Languages	2	4	4
T-EDP 102	Punch Card Applications	2	3	3
T-MAT 214	Statistics I	5	0	5
		17	7	20
THIRD QUARTER				
T-ENG 103	Communications III	3	0	3
T-EDP 108	Scientific Programming Languages	2	4	4
BUS 120	Principles of Accounting I	5	2	6
T-MAT 215	Statistics II	4	0	4
T-ENG 100	Speed Reading	2	0	2
		16	6	19

Course Title	Hours per Week		Quarter Hours
	Class	Lab.	Credit
FOURTH QUARTER			
ECO 201 Economics I	3	0	3
SPH 101 Oral Communication	3	0	3
T-EDP 202 Business Data Processing	2	4	4
BUS 121 Principles of Accounting II	5	2	6
T-EDP 205 Operations Research	2	2	3
	15	8	19
FIFTH QUARTER			
T-EDP 203 Programming for Business Applications	2	4	4
BUS 222 Intermediate Accounting I	5	2	6
BUS 235 Business Management	4	0	4
T-EDP 219 Systems and Procedures	3	0	3
	14	6	17
SIXTH QUARTER			
T-PSY 206 Applied Psychology	3	0	3
T-EDP 216 Business Research Project	2	6	5
T-EDP 220 Applied Business Systems	3	0	3
BUS 223 Intermediate Accounting II	5	2	6
T-BUS 217 Legal Environment of Business	3	0	3
	16	8	20

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR ELECTRONIC DATA PROCESSING: SCIENTIFIC

Course Title	Hours per Week		Quarter Hours
	Class	Lab.	Credit
FIRST QUARTER			
T-ENG 101 Communications I	3	0	3
T-MAT 101 Technical Mathematics I	5	0	5
BUS 101 Introduction to Business	3	0	3
T-EDP 101 Functional Wiring Principles	2	3	3
T-EDP 104 Introduction to Electronic Data Processing	3	2	4
	16	5	18
SECOND QUARTER			
T-ENG 102 Communications II	3	0	3
T-MAT 102 Technical Mathematics II	5	0	5
T-EDP 106 Business Programming Languages	2	4	4
T-MAT 214 Statistics I	5	0	5
T-ENG 100 Speed Reading	2	0	2
	17	4	19
THIRD QUARTER			
T-ENG 103 Communications III	3	0	3
T-EDP 108 Scientific Programming Languages	2	4	4
T-MAT 103 Technical Mathematics III	5	0	5
PHY 101 Introductory Physics I	3	2	4
T-MAT 215 Statistics II	4	0	4
	17	6	20
FOURTH QUARTER			
ECO 201 Economics I	3	0	3
T-EDP 204 Scientific Data Processing	2	4	4
T-MAT 201 Technical Mathematics IV	5	0	5
T-EDP 205 Operations Research	2	2	3
PHY 102 Introductory Physics II	3	2	4
	15	8	19

Course Title		Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIFTH QUARTER				
T-EDP 206	Programming for Scientific Applications	2	4	4
BUS 120	Principles of Accounting I	5	2	6
T-EDP 225	Numerical Analysis for Programming	3	2	4
T-EDP 219	Systems and Procedures	3	0	3
		13	8	17
SIXTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
T-EDP 217	Scientific Research Project	3	6	6
SPH 101	Oral Communication	3	0	3
T-MAT 219	Differential Equations	5	0	5
		14	6	17

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

BUS 101 Introduction to Business (3–0) 3

A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. Choosing a location and production line, design, production, sales and personnel staffing are topics studied.

BUS 120 Principles of Accounting I (5–2) 6

Introductory accounting principles designed to provide an understanding of accounting data. Accumulating, summarizing, analyzing and reporting information about service and mercantile enterprises are emphasized. Individual ownerships and partnerships are the business organizations stressed. Also included is a study of payrolls and payroll taxes.

BUS 121 Principles of Accounting II (5–2) 6

Emphasis is placed on recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The corporate form of business is studied. P.R. BUS 120.

BUS 222 Intermediate Accounting I (5–2) 6

An introduction to and review of fundamental processes of accounting. Emphasis is placed upon a thorough working knowledge and understanding of financial statements. Individual items in the balance sheet and income statement are analyzed and evaluated.

BUS 223 Intermediate Accounting II (5–2) 6

A continuation of the study begun in BUS 222. The application of accounting principles and concepts to account evaluation and income determination is emphasized. Special problems peculiar to corporations and analyses of financial reports are considered. P.R. BUS 222.

BUS 235 Business Management (4–0) 4

A study in depth of the principles of management. The major functions of planning, organizing, staffing, directing and controlling a firm's operations are carefully analyzed. Case studies and own company analysis are integral parts of the course.

ECO 201 Economics I (3–0) 3

Basic economics with attention to central problems of price, competition and money; supply and demand; business organization; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

PHY 101 Introductory Physics I (3–2) 4

The first of a three quarter sequence designed primarily for students not majoring in engineering mathematics or physical science. A study of the structure and states of matter and basic mechanical systems, with emphasis on the application of basic mathematics to theory. C.R. MAT 101 or consent.

PHY 102 Introductory Physics II (3–2) 4

A continuation of PHY 101 plus topics in the thermal properties of matter, behavior of fluids, and wave motion. P.R. PHY 101.

SPH 101 Oral Communication (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

T-BUS 217 Legal Environment of Business (3–0) 3

A study of the powers, policies, methods and procedures used by federal and state administrative agencies in promoting and regulating business enterprises. The course includes a consideration of the constitutional and statutory limitations on these commissions and judicial review of administrative action.

T-EDP 101 Functional Wiring Principles (2–3) 3

The fundamental principles of control-panel wiring necessary to perform basic machine functions of a unit record installation. Laboratory experiments on the keypunch, verifier, sorter, interpreter, reproducing punch, collator and accounting machine support the theoretical aspect of the course.

T-EDP 102 Punch Card Application (2–3) 3

The fundamental principles of control-panel wiring necessary to perform advanced machine functions of a unit record installation. Laboratory experiments are performed on the same equipment as T-EDP 101 with an introduction to the calculator. A case study of a unit-record application is investigated. P.R. T-EDP 101.

T-EDP 104 Introduction to Electronic Data Processing (3–2) 4

The fundamental concepts and principles of data processing systems are presented as an aid to developing the basic knowledge prerequisite for a future detailed study of computer systems and programming. This course provides a general knowledge of computer systems, data processing terminology, computer applications, flow charting, types of computer instructions, and programming in basic language.

T-EDP 106 Business Programming Languages (2–4) 4

The study of business processor and compiler languages. The student programs in current, applicable business language (business software) such as SPSII—Disk and COBOL. The exercises are limited to short problems which illustrate flow charting and program statements for the compiler language being studied. P.R. T-EDP 104.

T-EDP 108 Scientific Programming Languages (2–4) 4

The study of scientific compiler languages. The student programs in a current applicable scientific language, FORTRAN. The exercises are limited to short problems which illustrate statements and their functions for the compiler language under consideration. P.R. T-EDP 104, T.MAT 102.

T-EDP 202 Business Data Processing (2–4) 4

The effective use of Data Processing equipment in meeting the informational needs of business, utilizing COBOL in the solution of problems. The student will originate and/or investigate existing automated procedures for various business problems such as payroll, labor distribution and inventory to the extent of (1) problem definition, (2) system flow charts, (3) program flow charts, (4) computer programs, (5) sample input data, (6) sample output data and report formats, and (7) operation instructions necessary for a given business application. P.R. T-EDP 108, BUS 120.

T-EDP 203 Programming for Business Applications (2–4) 4

This course emphasizes the preparation and utilization of operations data used in a typical business. Case problems involving systems established for collecting the data, and generating information for organizational units are studied. Audit trails enabling the tracing of transactions back to the original source or forward to the final report are analyzed. Simulated data is used to demonstrate programming techniques (using COBOL) required in processing management information. Statistical analysis programming using a scientific language is studied as an aid to business decisions. P.R. T-EDP 202.

T-EDP 204 Scientific Data Processing (2–4) 4

The effective use of data processing equipment in the solution of a scientific problem. This course provides the student with a knowledge of programming concepts and techniques as applied in statistics and mathematics. The student also investigates advanced concepts in COBOL programming. P.R. T-EDP 108, T-MAT 215.

T-EDP 205 Operations Research (2–2) 3

Mathematical models effective in management planning, scheduling and control are studied. The student investigates problems applicable to linear programming models, transportation model, assignment model, CPM, PERT and queing theory. The computer will be utilized for problem solution using available library programs. P.R. T-EDP 108, T-MAT 214, T-MAT 102.

T-EDP 206 Programming for Scientific Applications (2–4) 4

This course is designed to expand the scope of scientific data processing and to investigate the automation of quantitative business problems. The student makes a study of library programs and/or analyzes the applications of programs in operation research, statistics and mathematics. P.R. T-MAT 201, T-MAT 215, T-EDP 205.

T-EDP 216 Business Research Project (2–6) 5

The work of the student during this quarter gives him an opportunity to initiate and carry out a complete project. This course places the responsibility upon the student to solve a significant problem with a minimum of assistance from the instructor. P.R. T-EDP 203, BUS 222, T-EDP 219.

T-EDP 217 Scientific Research Project (3–6) 6

The work of the student during this course gives him an opportunity to initiate and carry out a complete project. This course places the responsibility upon the student to solve a significant problem applicable to scientific data processing. P.R. T-EDP 219, T-EDP 225, T-EDP 206, T-EDP 204.

T-EDP 219 Systems and Procedures (3–0) 3

An introductory course in the principles of management systems applied to information data flows. Particular attention is given to forms flow charting, forms analysis and design and systems analysis. P.R. Approval of Department.

T-EDP 220 Applied Business Systems (3–0) 3

A continuation of management systems applied to information data flow. Practical work in systems flow charting and analysis is emphasized. The conducting of feasability studies, the preparation and maintenance of standard practice, policy and organization manuals, and computer applications are stressed. P.R. T-EDP 219.

T-EDP 225 Numerical Analysis for Programming (3–2) 4

A development of the mathematical principles upon which many computing methods are based. Topics introduced include theory of errors, numerical integration and differentiation, summation procedures, numerical solution of equations, and various types of approximations. The computer will be utilized when applicable. P.R. T-EDP 204, T-MAT 201.

T-ENG 100 Speed Reading (2–0) 2

The approach includes a concentrated effort to improve the student's ability to comprehend that which he reads with greater rapidity and accurateness. Special procedures are used to broaden the span of sentence recognition, to increase eye coordination and to improve the common faults of a slow reader.

T-ENG 101 Communications I (3–0) 3

This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as a functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English.

T-ENG 102 Communications II (3–0) 3

Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. T-ENG 101.

T-ENG 103 Communications III (3—0) 3

The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. Writing techniques of structure and syntax are emphasized. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. T-ENG 102.

T-MAT 101 Technical Mathematics I (5—0) 5

Fundamental algebraic operations, the rectangular coordinate system and fundamental trigonometric concepts and operations are introduced. C.R. High school credit in geometry or MAT 033.

T-MAT 102 Technical Mathematics II (5—0) 5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. P.R. T-MAT 101.

T-MAT 103 Technical Mathematics III (5—0) 5

The fundamental concepts of analytic geometry and differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, the integral and basic integration techniques. P.R. T-MAT 102.

T-MAT 201 Technical Mathematics IV (5—0) 5

More advanced concepts of differentiation and integration are considered. Included are graphs and derivatives of trigonometric functions, exponential and logarithmic differentiation and integration, integration techniques and tables of integrals, polar equations, parametric equations and Fourier Series. P.R. T-MAT 103.

T-MAT 214 Statistics I (5—0) 5

A study of the theory and application of statistics. Experience is given in the association and use of statistical techniques in the prediction and estimation of the outcomes of experiments related to practical problems in business and scientific data processing. Practical experience is gained in the utilization of computers in the statistical solution of problems. P.R. T-MAT 101.

T-MAT 215 Statistics II (4—0) 4

A continuation of Statistics I with emphasis on Chi-square analysis, analysis of variance, multiple regression, and trend analysis. P.R. T-MAT 214, T-MAT 102.

T-MAT 219 Differential Equations (5—0) 5

Methods of solving first-order and simpler higher-order ordinary differential equations and linear differential equations with constant coefficients. Solution of differential equations by series and numerical solutions of differential equations utilizing the computer when applicable. P.R. T-EDP 225, T-EDP 206.

T-PSY 206 Applied Psychology (3—0) 3

A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

ELECTIVES

T-EDP 100 Data Processing Technology Seminar (1—0) 0

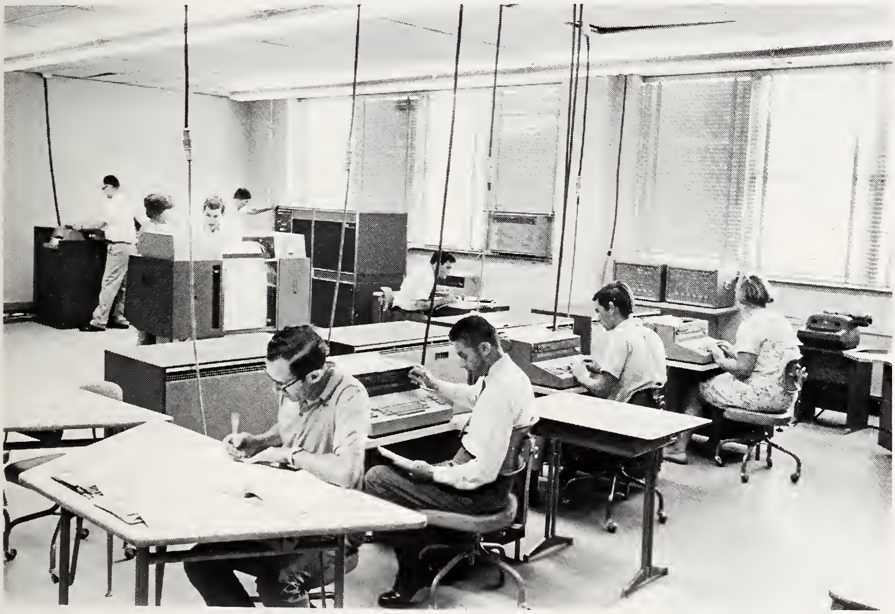
A seminar course designed to present to the student an opportunity to gain an overview of the curriculum and occupational requirements for data processing technicians.

T-EDP 103 Teleprocessing for Technicians (1—2) 0

PL/I programming is studied utilizing a terminal unit connected to a large-scale computer for execution. Techniques and applications using teleprocessing are introduced.

T-MAT 121 Numbering Systems and Boolean Algebra (4–0) 4

Topics include an introduction to numbering systems with bases other than ten, transformation from one system to another and fundamental operations in systems other than the decimal. The fundamental postulates, theorems, functions and operations of Boolean Algebra are studied and applied to computer logic designs and switching circuits. The logic of circuit design is considered rather than the electronic components used.



ENGINEERING TECHNOLOGY CURRICULA

Chemical
Civil - Architectural
Electrical - Electronics
Mechanical

CHEMICAL TECHNOLOGY

The chemical industry of the southeastern United States involves (1) basic research, (2) development of chemical processes through pilot plant investigations, (3) chemical manufacturing, (4) sales and services and (5) laboratory analyses and testing of materials.

Leading products are in the fields of textiles, paper, fertilizer, adhesives, protective coatings, plastics and rubber.

Chemical technicians are much in demand for laboratory testing and pilot plant studies throughout the industry.

DESCRIPTION OF CURRICULUM

The Chemical Technology curriculum is an intensive six-quarter program of theoretical and applied chemistry. It is designed to:

1. Develop the student's knowledge and understanding of the fundamental principles and concepts of chemistry.
2. Develop laboratory manipulative skills and techniques as needed on the job.
3. Familiarize the student with commercial manufacturing process problems and the part that the technician must play in the prevention and/or solution of these problems.

A total of ten courses is included to give the student ample training in general, organic, physical and analytical chemistry. Emphasis is placed upon development of laboratory skills. The use of such modern instruments as the colorimeter, infrared spectrophotometer and gas chromatograph is taught in the final two quarters. Graduates in this curriculum receive the degree Associate in Applied Science in Chemical Technology.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR CHEMICAL TECHNOLOGY

Course	Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 101	Communications I	3	0	3
T-MAT 101	Technical Mathematics I	5	0	5
T-PHY 101	Physics I: Basic Mechanics	3	2	4
CHM 101	General Chemistry I	4	3	5
T-ENG 100	Speed Reading	2	0	2
		17	5	19
SECOND QUARTER				
T-ENG 102	Communications II	3	0	3
T-MAT 102	Technical Mathematics II	5	0	5
T-PHY 102	Physics II: Work, Energy, Power	3	2	4
CHM 102	General Chemistry II	4	3	5
DFT 101	Technical Drafting I	2	4	3
		17	9	20

Course Title		Hours per Week		Quarter Hours Credit
THIRD QUARTER		Class	Lab.	
T-ENG 103	Communications III	3	0	3
T-MAT 103	Technical Mathematics III	5	0	5
T-PHY 103	Physics III: Electricity	3	2	4
CHM 103	General Chemistry III and Elementary Analysis	3	4	5
		14	6	17
FOURTH QUARTER				
SPH 101	Oral Communication	3	0	3
CHM 201	Quantitative Chemical Analysis	3	6	6
T-CHM 227	Physical Chemistry	3	2	4
T-PHY 104	Physics IV: Light, Atomic Physics, and Sound	3	2	4
	Elective *	3	0	3
		15	10	20
FIFTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
CHM 210	Organic Chemistry I	4	4	6
T-CHM 241	Industrial Chemical Analysis I	3	9	6
T.CHM 251	Independent Laboratory Study	0	3	1
		10	16	16
SIXTH QUARTER				
ECO 201	Economics I	3	0	3
CHM 211	Organic Chemistry II	4	4	6
T-CHM 242	Industrial Chemical Analysis II	3	12	7
		10	16	16

* To be approved by Chemical Technology Department

CIVIL ENGINEERING AND ARCHITECTURAL TECHNOLOGY

Civil Option

Architectural Option

The construction industry is large and varied and provides excellent opportunities for the individual with ability and training. Depending on the organization and the size of the project, the technician may work directly with engineers or architects or he may function as a liaison between them.

Civil engineering technicians perform many necessary planning and supervisory tasks. An individual, after graduating from this program, should qualify for such jobs as instrument man, survey party chief, draftsman, foreman, expeditor, surveyor, layout man, engineering aide, inspector or construction equipment and material salesman. Upon gaining sufficient construction experience, the technician has the opportunity to advance into positions such as field engineer, estimator, job superintendent, project manager or contractor.

Architectural technicians perform many of the planning tasks necessary to communicate the architect's designs to the builder. Graduates will be competent draftsmen who will work directly with registered architects and other qualified technicians within the office in the preparation of complete and accurate working drawings, details and specifications. The technicians will be well informed on the building industry in general, the operation of an architect's office, building codes, methods and materials of construction, and contract documents. Upon gaining sufficient experience they may be involved in estimating, field observation and many other facets of architectural practice. Their advancement to positions of responsibility such as "job captain" or project manager will depend only on their own aspirations and abilities.

DESCRIPTION OF CURRICULUM

The curriculum at Central Piedmont Community College includes both classroom and laboratory experiences with practical application to the industry. Well-qualified instructors and excellent equipment provide the student an opportunity to secure the education he needs for the many excellent positions available in this field. The degree Associate in Applied Science in Civil Engineering Technology or the degree Associate in Applied Science in Architectural Technology is awarded upon completion of the program.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR CIVIL ENGINEERING – ARCHITECTURAL TECHNOLOGY

Course Title			Hours per Week		Quarter Hours
			Class	Lab.	Credit
FIRST QUARTER					
T-CIV	101	Surveying I	2	6	4
T-DFT	106	Architectural Drafting I	2	6	4
T-MAT	101	Technical Mathematics I	5	0	5
T-ENG	101	Communications I	3	0	3
T-ENG	100	Speed Reading	2	0	2
T-ARC	100	**Introduction: History of Architecture			
		or	2	0	2
T-CIV	100	*Introduction: Civil Engineering Technology			
			16	12	20
SECOND QUARTER					
T-CIV	114	Statics	5	0	5
T-DFT	107	Architectural Drafting II	2	6	4
T-PHY	101	Physics I: Basic Mechanics	3	2	4
T-MAT	102	Technical Mathematics II	5	0	5
			15	8	18
THIRD QUARTER					
T-CIV	102	*Surveying II			
		or	2	6	4
T-DFT	108	**Architectural Drafting III			
T-CIV	218	Plain Concrete	1	3	2
T-CIV	105	Architectural-Engineering Materials and Methods	3	2	4
T-CIV	216	Strength of Materials	5	0	5
T-ENG	102	Communications II	3	0	3
			14	11	18
FOURTH QUARTER (Architectural Option)					
T-DFT	220	Architectural Drafting IV	2	6	4
T-CIV	219	Steel and Timber Construction	4	2	5
T-ARC	106	Architectural Mechanical Equipment	3	3	4
T-PHY	104	Physics IV: Light, Sound and Atomic Physics	3	2	4
T-CIV	223	Codes, Contracts and Specifications	2	2	3
			14	15	20
FIFTH QUARTER (Civil Engineering Option)					
T-CIV	220	Construction Planning	2	3	3
T-CIV	202	Properties of Soils	2	3	3
T-CIV	221	Reinforced Concrete Construction	4	2	5
T-PHY	103	Physics: Electricity	3	2	4
T-PSY	206	Applied Psychology	3	0	3
			14	10	18

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*Students taking Civil Engineering option
**Students taking Architectural Technology option

Course Title			Hours per Week Class	Lab.	Quarter Hours Credit
FIFTH QUARTER (Architectural Option)					
T-DFT	221	Architectural Drafting V	2	9	5
T-CIV	221	Reinforced Concrete Construction	4	2	5
T-PHY	103	Physics: Electricity	3	2	4
T-PSY	206	Applied Psychology	3	0	3
			12	13	17
SIXTH QUARTER (Civil Engineering Option)					
T-CIV	226	Foundation Construction	3	2	4
T-CIV	227	Construction of Roads and Pavements	2	3	3
T-CIV	225	Construction Estimates and Costs	3	3	4
T-ENG	103	Communications III	3	0	3
T-CIV	210	Structural Drafting and Design	2	4	3
ECO	201	Economics I	3	0	3
			16	12	20
SIXTH QUARTER (Architectural Option)					
T-DFT	222	Architectural Drafting VI	2	9	5
T-CIV	225	Construction Estimates and Costs	3	3	4
T-ENG	103	Communications III	3	0	3
ECO	201	Economics I	3	0	3
T-ARC	223	Architectural Office Practice	3	0	3
			14	12	18

ELECTRICAL – ELECTRONICS ENGINEERING TECHNOLOGY

Electrical Option

Electronics Option

The new space industry and a rapidly developing industrial society, with its resulting emphasis on automation, brings job opportunities for people who are well-grounded in electrical and electronic theory and who have knowledge of manufacturing, installing, operating and maintaining electrical and electronic equipment. The electrical technician works with many types of electrical controls and machines. Electronic technicians work with some of the above equipment as well as radar, telemetry, microwave and guidance systems, radio, TV systems, computers and specialized electronic equipment used in medicine.

DESCRIPTION OF CURRICULUM

The degree Associate in Applied Science in either Electrical or Electronics Engineering Technology will be awarded upon successful completion of this curriculum. The program at Central Piedmont Community College provides the student with a strong background in electrical and electronic theory along with large amounts of time spent in excellently equipped laboratories. This laboratory time provides the student with an opportunity to apply theory to practical problems involving modern equipment. Supporting courses in mathematics, physics and communicative skills help prepare the students for job opportunities as technicians and engineering assistants in such areas as sales, system maintenance, research, development and modification. Electives are provided to enable the student to broaden his background to include the principles of construction wiring and/or electronic data processing.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR ELECTRICAL – ELECTRONICS ENGINEERING TECHNOLOGY

Course	Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 100	Speed Reading	2	0	2
T-ENG 101	Communications I	3	0	3
T-MAT 101	Technical Mathematics I	5	0	5
T-PHY 101	Physics I: Basic Mechanics	3	2	4
T-ELC 101	Basic Electricity	3	4	5
T-ELC 150	Electrical Seminar	0	1	0
		16	7	19
SECOND QUARTER				
T-ENG 102	Communications II	3	0	3
T-MAT 102	Technical Mathematics II	5	0	5
T-ELC 105	Molecular and Crystal Structure	1	2	2
T-ELN 103	Electronic Instruments and Measurements	2	2	3
T-ELN 105	Active Electronic Elements	4	3	5
T-ELN 150	Electronic Seminar	0	1	0
		15	8	18
THIRD QUARTER				
T-ENG 103	Communications III	3	0	3
T-MAT 103	Technical Mathematics III	5	0	5
T-ELC 208	Control Circuits	3	3	4
T-ELC 201	Electrical Machines	5	6	7
T-ELC 151	Electrical Seminar	0	1	0
		16	10	19
FOURTH QUARTER				
T-PHY 102	Physics II: Work, Energy, Power	3	2	4
T-ELC 102	AC-DC Network Analysis	5	4	7
T-ELN 206	Electron Tube Circuits	5	4	7
T-ELN 151	Electronic Seminar	0	1	0
		13	11	18
FIFTH QUARTER				
T-ELN 207	Transistor Circuit Analysis	5	4	7
T-ELC 205	*Planning Electrical Installations			
	or	3	4	5
T-ELN 227	**Ultra High Frequency Techniques			
T-ELC 203	Systems Correction Procedures	1	6	4
T-ELN 235	Electronic Instrumentation	3	0	3
T-ELC 152	Electrical Seminar	0	1	0
		12	15	19
SIXTH QUARTER				
T-PHY 104	Physics IV: Light, Sound and Atomic Physics	3	2	4
T-ELC 204	*Industrial Electronics			
	or	3	3	4
T-ELN 220	**Receivers and Transmitters			
ECO 201	Economics I	3	0	3
T-PSY 206	Applied Psychology	3	0	3
T-ELN 221	Research Project	1	6	4
		13	11	18

* For students seeking a degree in Electrical Engineering Technology

** For students seeking a degree in Electronics Engineering Technology

MECHANICAL ENGINEERING TECHNOLOGY

Drafting and Design Option
Manufacturing Option

There are more than fifty-two different types of occupations in which a graduate of either of these two options of Mechanical Engineering Technology may be employed. Many of these occupations are closely related to management in industry and can provide paths to rewarding jobs.

The Mechanical Engineering Technician with a Drafting and Design option is well trained in drafting, the language of industry. He will use his knowledge to produce plans and specifications which describe the processes and procedures by which products are made and the materials from which they are made.

The Mechanical Engineering Technician with a Manufacturing option is skilled in the production efficiency areas of industry. He will work in manufacturing areas such as quality control, inventory and materials control, process planning, time and motion study, materials handling and cost estimating.

Job titles such as liaison engineer, sales engineer, field engineer or factory representative may be assigned to graduates from either option because of their training.

DESCRIPTION OF CURRICULUM

The student in either the Drafting and Design Option or the Manufacturing Option of Mechanical Engineering Technology receives a well-balanced program. The instruction, consisting of both laboratory and classroom experiences, includes courses in drafting, machine processes, hydraulics and pneumatics, applied mechanics, strength of materials, metallurgy and thermodynamics.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR MECHANICAL ENGINEERING TECHNOLOGY

Course Title		Hours per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 101	Communications I	3	0	3
T-MAT 101	Technical Mathematics I	5	0	5
T-PHY 101	Physics I: Basic Mechanics	3	2	4
DFT 101	Technical Drafting I	2	4	3
T-MEC 101	Machine Processes I	2	3	3
T-ENG 100	Speed Reading	2	0	2
		17	9	20
SECOND QUARTER				
T-ENG 102	Communications II	3	0	3
T-MAT 102	Technical Mathematics II	5	0	5
T-PHY 102	Physics II: Work, Energy, Power	3	2	4
T-DFT 102	Technical Drafting II	2	4	3
T-MEC 102	Machine Processes II	2	3	3
		15	9	18
THIRD QUARTER				
T-ENG 103	Communications III	3	0	3
T-MAT 103	Technical Mathematics III	5	0	5
T-PHY 103	Physics III: Electricity	3	2	4
T-PHY 106	Applied Mechanics	5	0	5
		16	2	17

Course Title		Hours per Week Class	Lab.	Quarter Hours Credit
FOURTH QUARTER				
SPH 101	Oral Communication	3	0	3
DFT 204	Descriptive Geometry	2	4	4
T-CIV 216	Strength of Materials	5	0	5
T-MEC 210	Physical Metallurgy I	3	2	4
T-MEC 219	Thermodynamics	3	0	3
		16	6	19
FIFTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
ECO 201	Economics I	3	0	3
T-MEC 235	Hydraulics and Pneumatics	3	2	4
T-MEC 211	Physical Metallurgy II	3	2	4
T-MAT 208	Compound Angles	3	0	3
		15	4	17
SIXTH QUARTER (Drafting and Design Option)				
T-DFT 205	Design Drafting	5	9	8
T-DFT 212	Jig and Fixture Design	2	3	3
T-DFT 211	Mechanisms	3	2	4
T-DFT 208	Die Design	3	3	4
		13	17	19
SIXTH QUARTER (Manufacturing Option)				
T-MEC 201	Process Planning	2	3	3
T-ISC 203	Time and Motion Study	3	4	5
T-ISC 209	Plant Layout and Materials Handling	3	4	5
T-MEC 213	Production Planning	2	3	3
T-ISC 202	Inspection and Quality Control	3	2	4
		13	16	20

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

CHM 101 General Chemistry I (4—3) 5

A study of the fundamental postulates and laws of chemistry with emphasis upon the relationship of atomic structure to physical and chemical properties of the elements.

CHM 102 General Chemistry II (4—3) 5

A study of general chemistry with emphasis upon chemical equilibria, chemical kinetics, solution stoichiometry and electrochemistry. P.R. CHM 101 or consent.

CHM 103 General Chemistry III and Elementary Analysis (3—4) 5

General chemistry including qualitative analysis with emphasis upon ionic equilibria and relating chemical properties to atomic and molecular structure. Some quantitative analysis with and without instruments will be included. P.R. CHM 102 or consent.

CHM 201 Quantitative Chemical Analysis (4—4) 6

The theory of quantitative volumetric and gravimetric determinations, with emphasis upon the principles of precipitation, neutralization, oxidation and reduction applied to unknowns. Some modern instrumental methods are included. P.R. CHM 103 or consent.

CHM 210 Organic Chemistry I (3–6) 6

A systematic study of the basic theories, principles and techniques of organic chemistry and their application to reactions of aliphatic and aromatic compounds and natural products. Laboratory work in purification, characterization and synthesis of organic compounds. P.R. CHM 103 or consent.

CHM 211 Organic Chemistry II (4–4) 6

A continuation of CHM 210 with a greater emphasis on instrumental analysis in laboratory. P.R. CHM 210 or consent.

DFT 101 Technical Drafting I (2–4) 3

An introduction to drafting and design practices and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing and storing drawings are studied and the student is introduced to "working drawings."

DFT 204 Descriptive Geometry (2–4) 4

Graphic analysis of space problems involving points, lines, planes, connectors and combinations of these. Practical design problems are stressed with analytical verification when applicable. Visualization is stressed on every problem. P.R. T-DFT 102, T-MAT 102.

ECO 201 Economics I (3–0) 3

Basic economics with attention to central problems of price, competition and money; supply and demand; business organizations; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

SPH 101 Oral Communication (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

T-ARC 100 Introduction: History of Architecture (2–0) 2

A course designed to provide fundamental knowledge of the historical styles and evolution of architecture from the earliest times to the present day.

T-ARC 106 Architectural Mechanical Equipment (3–3) 4

A general study of heating, air conditioning, plumbing and electrical equipment, materials and symbols. The course includes building code requirements pertaining to residential and commercial structures, reading and interpretation of working drawings by mechanical engineers and coordination of mechanical and electrical features with structural and architectural designs.

T-ARC 223 Architectural Office Practice (3–0) 3

A study of the organization of a typical architectural firm and its relationship to clients, contractors, suppliers, consultants and other architects. Ethics of the profession as applicable to the technician's role in the architectural firm will be stressed.

T-CHM 227 Physical Chemistry (3–2) 4

Atomic theory, states of matter, chemical thermodynamics, molecular properties of solutions, equilibria, phase role, electrochemistry, kinetics, surface chemistry and photochemistry constitute major areas of study. P.R. CHM 102.

T-CHM 241 Industrial Chemical Analysis I (3–9) 6

Various methods of chromatography are used in industrial applications. Emphasis is placed upon the use of the gas chromatograph. Ion exchange is also studied. P.R. CHM 210, T-CHM 227.

T-CHM 242 Industrial Chemical Analysis II (3–12) 7

Optical methods of analysis are emphasized. Laboratory work centers about the use of the colorimeter and the infrared spectrophotometer. P.R. T-CHM 241.

T-CHM 251 Independent Laboratory Study (0–3) 1

Individual study and research in the laboratory. Topics will be assigned by the department.

T-CIV 100 Introduction: Civil Engineering Technology (2—0) 2

By the use of outside speakers, films, and inspection trips to building and highway construction projects the student is introduced to the construction industry and to the characteristics and requirements of his future role as a construction technician.

T-CIV 101 Surveying I (2—6) 4

The theory and practice of plane surveying, including taping, differential and profile leveling, cross sections, slope staking, earthwork computations, transit, measurements of angles and directions and transit-tape surveys. C.R. T-MAT 101, T-DFT 106.

T-CIV 102 Surveying II (2—6) 4

Topics studied include traverse surveys and computations, triangulation of ordinary precision, stadia, plane table, land area calculations, topographic surveys and mapping and adjustment of instruments. P.R. T-CIV 101.

T-CIV 103 Surveying III (2—6) 4

Horizontal and vertical curves; land surveying; introduction to photogrammetry and its application; building and highway construction surveying, including lines and grades for roads; foundation layout and building construction; sewer and pipe line surveys. P.R. T-CIV 102.

T-CIV 105 Architectural-Engineering Materials and Methods (3—2) 4

Materials used in the construction of architectural structures will be studied. Study of manufacturers' specifications for materials, properties and standard sizes of structural materials, and construction techniques are included. Inspection field trips will be made to construction sites. C.R. T-CIV 216, T-CIV 218.

T-CIV 114 Statics (5—0) 5

Study of forces, resultants, and types of force systems; moments, equilibrium of coplanar forces by analytical and graphic methods; stresses and reactions in simple structures; equilibrium of forces in space; static and kinetic friction; center of gravity, centroids and moment of inertia. C.R. T-MAT 101.

T-CIV 201 Properties of Engineering Materials (2—3) 3

The study and testing of the properties of ferrous and non-ferrous metals, welds, timber, stone, clay products and plastics; load and strain measurements; the behavior of materials under load; qualities other than strength; control of the properties of materials; non-destructive tests. P.R. T-PHY 101, T-CIV 216.

T-CIV 202 Properties of Soils (2—3) 3

A study of soil types and their physical properties; mechanical analysis and standard tests of soils; techniques of subsurface investigation; earth pressure theories; bearing capacity; stability of slopes; hydrostatics of ground water; methods of compaction and consolidation. P.R. T-CIV 216.

T-CIV 210 Structural Drafting and Design (2—4) 3

The course stresses designing and detailing of the component parts of steel, timber, and reinforced concrete structures, using the latest steel and reinforced concrete handbooks. Conventional methods of representation, dimensioning, detailing, markings, and connections of structural and reinforced steel are also studied. Modern fabricating shop practices are included. P.R. T-CIV 219, T-CIV 221, T-DFT 107.

T-CIV 216 Strength of Materials (5—0) 5

This course emphasizes fundamental stress and strain relationship, torsion, shear and bending moments, stresses and deflections in beams, and introduction to statically indeterminate beams, columns and combined stresses. P.R. T-CIV 114 or T-PHY 106.

T-CIV 218 Plain Concrete (1—3) 2

The study and testing of the composition and properties of concrete, including cementing agents, aggregates, admixtures and air-entrainment. Other topics include the design and proportioning of concrete mixes to obtain pre-determined strengths and properties, methods of placing and curing concrete, and standard control tests of concrete. C.R. T-CIV 216.

T-CIV 219 Steel and Timber Construction (4–2) 5

The analysis and basic design, according to the latest AISC specifications, of steel beams, tension members, columns, and riveted, high strength bolted and welded connections; the study of plate girders, industrial building roofs and bents, continuous spans, lightweight steel construction; the use of the latest American Institute of Steel Construction Manual. Design of timber members and their connections. Field inspection trips. P.R. T-CIV 216.

T-CIV 220 Construction Planning (2–3) 3

The analysis of construction plant layout requirements and contractor's organization for building and highway projects. Construction scheduling; project control and supervision; coordinating trades on building construction. Operations, charts, and practical application of critical path method (CPM) for construction planning, scheduling, and "time-cost" determination. P.R. T-CIV 105.

T-CIV 221 Reinforced Concrete Construction (4–2) 5

The analysis and design, by means of both the working and ultimate strength methods of the latest ACI Building Code, of reinforced concrete rectangular beams, T-beams, continuous members, composite construction, and floor systems composed of one-way slabs, two-way slabs or flat slabs. Use of the latest CRSI Design Handbook; principles of prestressed and precast concrete. Field inspection trips. P.R. T-CIV 216, T-CIV 218.

T-CIV 223 Codes, Contracts and Specifications (2–2) 3

The basic principles and methods most significant in contract relationships; appreciation of the legal aspects of construction work; study of the national, state and local building codes; interpreting and outlining specifications.

T-CIV 225 Construction Estimates and Costs (3–3) 4

The interpretation of working drawings of timber, structural steel and reinforced concrete structures and highways; preparation of materials and labor quantity surveys from plans and specifications; approximate and detailed estimates of costs, bidding procedures and preparation of bids. P.R. T-DFT 107; C.R. T-CIV 223.

T-CIV 226 Foundation Construction (3–2) 4

Exploration of sites; study of principles of foundation action; theory and construction practices pertaining to excavation bracing, cofferdams, drainage, stabilization, various types of footings, foundation walls, pile foundations, retaining walls, shoring and underpinning. Field inspection trips. P.R. T-CIV 219, T-CIV 221, T-CIV 202.

T-CIV 227 Construction of Roads and Pavements (2–3) 3

Construction practices are studied for various types of road building, including soil properties, grading, preparation of subgrades and base courses, drainage, embankments, compaction and formwork. The design, construction and testing of rigid portland cement, concrete and flexible bituminous pavements are emphasized. Field inspection trips. P.R. T-CIV 202, T-CIV 217; C.R. T-CIV 103.

T-DFT 102 Technical Drafting II (2–4) 3

A study of the application of orthographic projection principles to more complex drafting problems. Primary and secondary auxiliary views, simple and successive revolutions, sections, conventions and isometric and oblique pictorials are stressed. P.R. DFT 101.

T-DFT 106 Architectural Drafting I (2–6) 4

A course designed to provide fundamental knowledge of the principles of drafting. The basic skills and techniques of drafting are taught, including use of drafting equipment, lettering, freehand orthographic and pictorial sketching, geometric construction and orthographic drawings. Solution of projection problems dealing with principles of descriptive geometry involving points, lines, planes and connectors. The principles of isometric, oblique and perspective drawings are introduced.

T-DFT 107 Architectural Drafting II (2–6) 4

Development of techniques in architectural lettering, symbols and their interpretation, dimensioning, freehand and instrument drafting. Drawing of construction details, using appropriate material symbols and connections, is stressed. Sections, scale details and full-size details will be prepared from preliminary sketches. Applications of descriptive geometry are used in the visualization and analytical solutions of drafting problems involving auxiliary views, intersections and developments. P.R. T-DFT 106; C.R. T-CIV 105.

T-DFT 108 Architectural Drafting III (2—6) 4

An approach in depth to the study of architectural drafting which stresses the development of techniques in architectural lettering, dimensioning, freehand sketching and instrument drawing. Working drawings, including plans, elevations, sections, scale details and full-size details will be prepared from preliminary sketches. P.R. T-DFT 107; C.R. T-CIV 105.

T-DFT 205 Design Drafting (5—9) 8

A course in machine design which stresses the design of machine members by strength of material calculations. Principles emphasized include design sketching and drawing, layout drafting, detailing from layouts, production drawings and simplified drafting practices. Research is done in solving design problems through use of manufacturers' catalogs, manuals, periodicals and laboratory experiments. P.R. T-CIV 216, T-MEC 211.

T-DFT 208 Die Design (3—3) 4

This course is designed to give the student a thorough knowledge of die design drafting techniques, presses and their operation, the theory and formulas for cutting, drawing and forming sheet metal, and the various types of die construction and die details. P.R. T-DFT 102, T-MEC 211, T-CIV 216.

T-DFT 211 Mechanisms (3—2) 4

Mathematical and drafting-room solutions of problems involving the motion principles of machine elements. A study of motions of linkages, belts, chains and gears and displacements, velocities and accelerations of points and lines within these mechanisms. Layout methods for designing cams, belts, pulleys, gears and gear trains and linkages are also studied. P.R. T-DFT 102, T-MAT 102, T-PHY 102.

T-DFT 212 Jig and Fixture Design (2—3) 3

Commercial standards, principles, practices and tools of jig and fixture design are studied. The course includes individual project and design work to acquaint students with various types of jigs and fixtures and their design. P.R. T-DFT 102, T-MEC 210, T-CIV 216.

T-DFT 220 Architectural Drafting IV (2—6) 4

A continuation of T-DFT 108 with emphasis on drawing structural plans and details as prepared for building construction including steel, concrete and timber structural components. Reference materials will be used to provide the draftsman with skills and knowledge in locating data and in using handbooks. P.R. T-DFT 108.

T-DFT 221 Architectural Drafting V (2—9) 5

Drawing of plans and details for such mechanical equipment as air conditioning, plumbing and electrical systems by using appropriate symbols and conventions. Consideration is given to coordination of mechanical and electrical features with structural and architectural components. P.R. T-DFT 220.

T-DFT 222 Architectural Drafting VI (2—9) 5

Preparation of the complete set of working drawings for the architectural structure. Preparation of millwork drawings, cabinets and built-in equipment detail drawings, and door, window and room schedules. Site and landscaping plans will be studied and drawn. Final assembly of the complete document for construction purposes will be made. P.R. T-DFT 221, T-CIV 101, T-DFT 235.

T-DFT 233 Office Practice Seminar (2—3) 3

A study of the professional relationship of the architectural firm to clients, contractors, suppliers, consultants and other architects. Ethics of the profession as applicable to the draftsman's role in the architectural firm will be stressed.

T-EDP 101 Functional Wiring Principles (2–3) 3

The fundamental principles of control-panel wiring necessary to perform basic machine functions of a unit record installation. Laboratory experiments on the keypunch, verifier, sorter, interpreter, reproducing punch, collator and accounting machine support the theoretical aspect of the course.

T-EDP 104 Introduction to Electronic Data Processing (3–2) 4

The fundamental concepts and principles of data processing systems are presented as an aid in developing the basic knowledge prerequisite for a future detailed study of computer systems and programming. This course provides a general knowledge of computer systems, data processing terminology, computer applications, flow charting, types of computer instructions and programming in basic language.

T-ELC 101 Basic Electricity (3–4) 5

The basic electricity subjects studied include structure of matter, electrical terminology and symbols, electron theory of current flow, magnets and magnetic fields. The course stresses a mathematical analysis of direct current resistive circuits. Ohm's Law, Kirchkoff's Law and the power law are studied. Fundamental principles of inductors, capacitors and time constant circuits are introduced. C.R. T-MAT 101 or MAT 031.

T-ELC 102 AC-DC Network Analysis (5–4) 7

This course is based on the theory of alternating current and voltage. Mathematical analysis is made of sine forms. Inductive reactance, capacitive reactance, and impedance characteristics of alternating current circuits are analyzed through the use of vectors. Series and parallel resonant circuit conditions are compared, and practical application of these conditions is made. P.R. T-ELC 101; C.R. T-MAT 102.

T-ELC 105 Molecular and Crystal Structure (1–2) 2

A treatment of modern atomic and molecular theory with emphasis on crystal structure as it pertains to solid state electronics. Valence bonding and characteristics of crystalline materials containing donor and acceptor impurities are stressed. C.R. T-ELC 101.

T-ELC 124 Residential Wiring (3–3) 4

This course provides instruction and application in the fundamentals of planning, layout and installation of wiring in residential applications. Experience is provided in the application of National Electrical Code regulations to services, switchboards, lighting, fusing, wire sizes, branch circuits and conduits. Related instruction is provided in blueprint reading.

T-ELC 125 Commercial and Industrial Wiring (3–3) 4

The course deals with the layout, planning and installation of wiring systems in commercial and industrial complexes. Practical experience is provided in the application of the National Electrical Code to wiring, conduit preparation and the installation of simple systems. P.R. T-ELC 124.

T-ELC 150 Electrical Seminar (0–1) 0

A weekly seminar in which programs will be presented on topics of particular interest to students of electrical technology. Guest lecturers, audio-visual media, product demonstrations and student research reports will be used. Open to all interested students.

T-ELC 151 Electrical Seminar (0–1) 0

A continuation of T-ELC 150.

T-ELC 152 Electrical Seminar (0–1) 0

A continuation of T-ELC 151.

T-ELC 201 Electrical Machines (5–6) 7

Principles and characteristics of alternating and direct current machines are studied. Selection, care and application of direct current generators and motors and alternating current generators, transformers and three-phase, synchronous and single-phase motors are included. P.R. T-ELC 101.

T-ELC 203 Systems Correction Procedures (1–6) 4

A systematic analysis of complex circuitry. Topics include methods of locating and correcting malfunctions, troubleshooting by voltage measurements, resistance measurements and wave-form observations. Schematic reading and interpretation are stressed. P.R. T-ELN 103, T-ELN 105.

T-ELC 204 Industrial Electronics (3—3) 4

This course stresses electronics as applied to production systems, electronically controlled rectifiers, servomechanisms, motors, magnetic amplifiers, ultrasonic cleaning and high frequency heating equipment. P.R. T-ELN 235, T-ELC 208.

T-ELC 205 Planning Electrical Installations (3—4) 5

The chief objectives of the course are familiarization with the National Electrical Code; a knowledge of the power requirements and typical design of industrial and commercial installations; and design of and calculations for illumination and electric heating systems.

T-ELC 205 Control Circuits (3—3) 4

Topics studied include motor starting and speed controls, switching circuits based on Boolean algebra and open and closed loop servo systems. C.R. T-ELC 201.

T-ELN 103 Electronic Instruments and Measurements (2—2) 3

A study of basic service and laboratory electronic instruments with emphasis on the oscilloscope. Topics studied include theory of operation, function, tolerances and calibration. Laboratory experiences stress the application of the instruments studied. P.R. T-ELC 101.

T-ELN 105 Active Electronic Elements (4—3) 5

The characteristics of semiconductor diodes, transistors, semiconductor controlled switches, and other solid state devices are considered. The theory of emission and characteristics of Kenotrons, pliotrons, phanotrons, thyratrons, ignitrons and other electron tubes are studied. Basic rectifier, amplifier and oscillator circuits are introduced. C.R. T-ELN 103, T-ELC 105.

T-ELN 150 Electronic Seminar (0—1) 0

A weekly seminar in which programs will be presented on topics of particular interest to students of electronics technology. Guest lecturers, audio-visual media, product demonstrations and student research reports will be used. Open to all interested students.

T-ELN 151 Electronic Seminar (0—1) 0

A continuation of T-ELN 150.

T-ELN 206 Electron Tube Circuits (5—4) 7

A study of vacuum and gas tube rectifier circuits, wave shaping circuits, amplifiers and oscillators. Practical applications are stressed. P.R. T-ELN 105.

T-ELN 207 Transistor Circuit Analysis (5—4) 7

A detailed study of application, analysis and practical design of semiconductor circuits. Analyses such as hybrid equivalent circuits for transistors are covered. An introduction to theory and application of integrated solid state circuitry is also included. P.R. T-ELN 206.

T-ELN 220 Receivers and Transmitters (3—3) 4

The basic principles of amplitude and frequency modulated transmitters and receivers are studied. Radio frequency and intermediate frequency amplifiers, frequency response, stage gain, distortion, noise characteristics and frequency stability are included in the course. P.R. T-ELN 207.

T-ELN 221 Research Project (1—6) 4

Under the guidance of an instructor, a topic from an area in electrical or electronics technology which is of interest to the student is selected and explored. This topic provides opportunity for library research and laboratory application of principles studied in previous courses. P.R. T-ELN 207, T-ELC 208, T-ELN 235.

T-ELN 227 Ultra High Frequency Techniques (3—4) 5

This course requires the application of previously studied circuits to the broad field of ultra high frequency. Experiments are performed and theory studied on wave guides, cavity resonators and klystrons. Magnetrons, traveling wave tubes, lasers and masers are studied. P.R. T-ELN 206, T-ELC 102.

T-ELN 235 Electronic Instrumentation (3—0) 3

A basic study of sensory devices for detecting such physical changes as changes in pressure, temperature, sound, light and electricity. The associated circuitry and indicating devices are also studied. P.R. T-ELN 103, T-ELN 105.

T-ENG 100 Speed Reading (2—0) 2

The approach includes a concentrated effort to improve the student's ability to comprehend that which he reads with greater rapidity and accurateness. Special procedures are used to broaden the span of sentence recognition, to increase eye coordination and to improve the common faults of a slow-reader.

T-ENG 101 Communications I (3—0) 3

This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as a functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English.

T-ENG 102 Communications II (3—0) 3

Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph, and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. T-ENG 101.

T-ENG 103 Communications III (3—0) 3

The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. Writing techniques of structure and syntax are emphasized. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. T-ENG 102.

T-ISC 202 Inspection and Quality Control (3—2) 4

The principles and techniques of quality control and cost saving. Organization and procedure for efficient quality control. Functions, responsibilities, structure, costs, reports, records, personnel and vendor-customer relationships in quality control. Sampling inspections, process control and tests for significance. P.R. T-MAT 103, T-MEC 102; C.R. T-MEC 201, T-MEC 213.

T-ISC 203 Time and Motion Study (3—4) 5

A course in the types of methods studies and their application. Process charts, analysis sheets, time study, work simplification, skill and effort rating are considered.

T-ISC 209 Plant Layout and Materials Handling (3—4) 5

A practical study of factory planning with emphasis on the most efficient arrangements of work areas to achieve lower manufacturing costs. Layouts for small and medium-sized plants, layout fundamentals, selection of production equipment and materials handling equipment are studied. The effective management of men, money and materials in a manufacturing operation is emphasized. P.R. T-DFT 102, T-MEC 102.

T-MAT 101 Technical Mathematics I (5—0) 5

Fundamental algebraic operations, the rectangular coordinate system and fundamental trigonometric concepts and operations are introduced. C.R. High school credit in geometry or MAT 033.

T-MAT 102 Technical Mathematics II (5—0) 5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. P.R. T-MAT 101.

T-MAT 103 Technical Mathematics III (5–0) 5

The fundamental concepts of analytic geometry and differential and integral calculus are introduced. Topics included are graphing techniques, geometric and algebraic interpretation of the derivative, differentials, rate of change, and the integral and basic integration techniques. P.R. T-MAT 102.

T-MAT 121 Numbering Systems and Boolean Algebra (4–0) 4

Topics include an introduction to numbering systems with bases other than ten, transformation from one system to another, and fundamental operations in systems other than the decimal. The fundamental postulates, theorems, functions and operations of Boolean Algebra are studied and applied to computer logic designs and switching circuits. The logic of circuit design is considered rather than the electronic components used.

T-MAT 208 Compound Angles (3–0) 3

A special study of solid geometrical figures which involves the relations of angles and sides of triangles that lie in different planes. The fundamental principles of compound angles are developed for the five basic types of solid figures, and these principles are used to obtain solutions in solid trigonometry. Practical application of theory is stressed throughout the course, with emphasis on angular hole boring, form cutting, grinding, machining of jig and fixture parts and tools and dies on angle plates. The course provides a combination of theory and practice to enable the student to find the proper general approach to compound angle problems in industry. P.R. T-MAT 102.

T-MEC 101 Machine Processes I (2–3) 3

An introductory course designed to acquaint the student with the basic hand tools, safety procedures and machine processes of our modern industry. It will include a study of measuring instruments, characteristics of metals and cutting tools. The student will become familiar with the lathe family of machine tools by performing selected operations such as turning, facing, threading, drilling, boring and reaming.

T-MEC 102 Machine Processes II (2–3) 3

A study of advanced operations on lathe, drilling, boring and reaming machines. A study of milling machine theory and practice through study of the types of milling machines, cutters, jig and fixture devices, and the accessories used in a modern industrial plant. Safety in the operational shop is stressed. P.R. T-MEC 101.

T-MEC 201 Process Planning (2–3) 3

This course applies theory in process planning. The student puts all his previously gained knowledge of manufacturing processes to practical use by solving actual process-planning problems. Emphasis is placed on the proper selection of process and machinery in the light of the quantities involved, with possible alternate methods being explored. The basic concept of making the best possible product in the shortest period of time and in the most economical way is stressed throughout the course. P.R. T-MEC 102, T-DFT 102, T-MAT 101.

T-MEC 210 Physical Metallurgy I (3–2) 4

An introductory study of the basic properties of metals and alloys, including analysis of the structure of metals and alloys, atomic structure, nuclear structure and nuclear reactions, solid (crystalline) structure, methods of designating crystal planes, liquid and vapor phases, phase diagrams and alloy systems. P.R. T-PHY 101.

T-MEC 211 Physical Metallurgy II (3–2) 4

Properties of metals and alloys, the reactions of metals, diffusion, carburizing, metal bending, homogenization, recrystallization and grain growth, age bordening, nitriding, internal oxidation, heat treatment of steel, laboratory experiments and demonstrations. P.R. T-MEC 210.

T-MEC 213 Production Planning (2–3) 3

Day-to-day plant direction including forecasting, product planning and control, scheduling, dispatching, routing and inventory control. Case histories are discussed in the classroom, and courses of corrective action are developed. C.R. T-MEC 201; P.R. T-DFT 102, T-MAT 101.

T-MEC 219 Thermodynamics (3–0) 3

An introductory study of the changes in which energy is involved. Topics studied include the laws of thermodynamics, the general energy equation, the simple energy equation, and the nomenclature and understanding of various processes and cycles. P.R. T-PHY 102; C.R. T-MAT 103.

T-MEC 235 Hydraulics and Pneumatics (3–2) 4

A course in the basic theories of hydraulic and pneumatic systems, emphasizing combinations of systems in various circuits, basic designs and functions of circuits and motors, controls, electrohydraulic servomechanisms, plumbing, filtration, accumulators and reservoirs. P.R. T-PHY 103, T-MAT 103.

T-PHY 101 Physics I: Basic Mechanics (3–2) 4

A fundamental course covering several basic principles of physics. The divisions included are solids and their characteristics, liquids in motion, gas laws and applications. Laboratory experiments and specialized problems dealing with these topics are part of this course.

T-PHY 102 Physics II: Work, Energy, Power (3–2) 4

The major areas covered in this course are work, energy, and power. Instruction includes such topics as statics, forces, center of gravity and dynamics. Units of measurement and their applications are a vital part of this course. A practical approach is used in teaching students the use of essential mathematical formulas. P.R. T-PHY 101, T-MAT 101.

T-PHY 103 Physics III: Electricity (3–2) 4

Basic theories of electricity, types of electricity, methods of producing, transmitting and transforming electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction, voltage, amperage, resistance, horsepower, wattage and transformers are major parts of the course. P.R. T-PHY 101, T-MAT 102.

T-PHY 104 Physics IV: Light, Sound, and Atomic Physics (3–2) 4

A study of sound and wave motion and its technical applications to industry and related fields. Topics include illumination and principles of optical instruments. Practical aspects are emphasized. P.R. T-MAT 102, T-PHY 101.

T-PHY 105 Applied Mechanics (5–0) 5

The concepts and principles of statics and dynamics are studied. Parallel concurrent and nonconcurrent force systems in coplanar and noncoplanar situations, concepts of centroids and center of gravity, moments of inertia, fundamentals of kinetics and kinematics of velocity and motion are important topics. P.R. T-PHY 102; C.R. T-MAT 102.

T-PSY 206 Applied Psychology (3–0) 3

A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

FIRE SCIENCE TECHNOLOGY

The fire science technician is responsible for seeking to prevent losses by eliminating hazards. He inspects various types of buildings for fire and safety hazards, checks existing fire and safety codes for methods of eliminating hazards, and applies principles of protection in a logical sequence to arrive at solutions.

Employment opportunities as a fire science technician are available with insurance companies, industrial firms, governmental agencies, educational organizations, fire protection equipment manufacturers and research groups. The technician may also be involved in teaching the use of basic fire protection and safety equipment, in demonstrating equipment and in supervising installation of equipment. He may become a member of a team on research projects and in this capacity may serve as a link between the engineer and skilled employees.

DESCRIPTION OF THE CURRICULUM

Fire Science Technology is a two-year curriculum of technical education. It is designed to prepare the individual for entry-level employment as a fire science technician. The curriculum provides a basic technical background in fire protection, safety· and related subjects. Technical mathematics, science and communication skills are also included. Students are trained to identify fire and safety hazards and to propose effective measures for eliminating hazards. Specific skills are developed in many phases of the occupation.

This curriculum is offered in cooperation with the Rowan Technical Institute. All courses except several which require specialized fire equipment can be taken at Central Piedmont. The courses offered at Central Piedmont are scheduled so that persons now employed as firemen can take them at night. The courses requiring specialized fire equipment are offered at Rowan Technical Institute and are also scheduled for the convenience of persons now employed as firemen. Graduates will receive the degree Associate in Applied Science in Fire Science Technology.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR FIRE SCIENCE TECHNOLOGY

Course	Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 100	Speed Reading	2	0	2
T-ENG 101	Communications I	3	0	3
T-PHY 101	Physics I: Basic Mechanics	3	2	4
T-MAT 101	Technical Mathematics I	5	0	5
T-FIP 115	Fire Prevention Programs	3	0	3
T-FIP 101	Introduction to Fire Protection Hazards	3	0	3
		19	2	20
SECOND QUARTER				
T-ENG 102	Communications II	3	0	3
T-MAT 102	Technical Mathematics II	5	0	5
T-PHY 102	Physics II: Work, Energy, Power	3	2	4
T-FIP 211	Insurance Grading Schedules	3	0	3
T-FIP 102	Municipal Fire Protection	3	0	3
		17	2	18
THIRD QUARTER				
T-ENG 103	Communications III	3	0	3
T-PHY 103	Physics III: Electricity	3	2	4
DFT 101	Technical Drafting	2	4	3
ECO 201	Economics	3	0	3
T-FIP 135	Training Programs and Methods of Instruction	3	0	3
		14	6	16

Course	Title	Hours per Week		Quarter Hours Credit
		Class	Lab.	
FOURTH QUARTER				
SPH 101	Oral Communication	3	0	3
CHM 101	General Chemistry I	4	3	5
T-CIV 110	Construction Drafting and Design	2	4	3
T-FIP 230	*Hydraulics and Water Distribution Systems	3	3	4
T-FIP 103	*Construction Codes and Material Rating	2	2	3
		14	12	18
FIFTH QUARTER				
T-PSY 206	Applied Psychology	3	0	3
T-FIP 220	Fire Fighting Strategy	3	0	3
T-FIP 215	Chemistry of Flammable Materials	3	4	5
T-FIP 231	*Sprinkler and Standpipe Systems	3	3	4
	**Elective	4	0	4
		16	7	19
SIXTH QUARTER				
SOC 201	Introduction to Sociology	5	0	5
T-FIP 235	*Inspection Principles and Practices	3	6	5
T-FIP 245	*Automatic Alarm and Extinguishing Systems	2	4	4
T-FIP 225	Fire Protection Law	3	0	3
		13	10	17

* Courses to be taken at Rowan Technical Institute

** Elective courses must be selected with adviser's approval

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

CHM 101 General Chemistry I (4–3) 5

A study of the fundamental postulates and laws of chemistry with emphasis upon the relationship of atomic structure to physical and chemical properties of the elements.

DFT 101 Technical Drafting I (2–4) 3

An introduction to drafting and design practice and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing, and storing drawings are studied, and the student is introduced to "working drawings".

ECO 201 Economics I (3–0) 3

Basic concepts with attention to central problems of price, competition and money; supply and demand; business organizations; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

SOC 201 Introduction to Sociology (5–0) 5

An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change.

SPH 101 Oral Communication (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

T-CIV 110 Construction Drafting and Design (2–4) 3

An introduction to architectural and structural drafting including plans, elevations, sections and construction details of residential and commercial buildings, highways and highway structures. Other topics include reading and analyzing architectural, structural and mechanical blueprints pertaining to building and highway construction and an introduction to specifications. P.R. DFT 101.

T-ENG 100 Speed Reading (2—0) 2

The approach includes a concentrated effort to improve the student's ability to comprehend that which he reads with greater rapidity and accurateness. Special procedures are used to broaden the span of sentence recognition, to increase eye coordination and to improve the common faults of a slow reader.

T-ENG 101 Communications I (3—0) 3

This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as a functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English.

T-ENG 102 Communications II (3—0) 3

Designed to aid the student in continuing improvement of writing and self-expression in business and composition format. Emphasis is placed on the sentence, paragraph and whole composition. This course is intended to stimulate students in applying the basic principles of English. P.R. T-ENG 101.

T-ENG 103 Communications III (3—0) 3

The fundamental concepts of English are utilized as a background for the organization and techniques of modern report and technical report writing. This course offers exercises in developing typical reports, letters, memoranda and resumes. Writing techniques of structure and syntax are emphasized. At the end of the term each student is required to prepare a report pertaining to his chosen curriculum. P.R. T-ENG 102.

T-FIP 101 Introduction to Fire Protection Hazards (3—0) 3

History and development of fire service, safety and security movements. The role of a fire service, protection, safety personnel, and ancillary organizations. Identification of general fire hazards and their causes and the application of fire protection principles to them.

T-FIP 102 Municipal Fire Protection (3—0) 3

Fire department organization, personnel management, and the department's relationship with other city departments. Evaluation of public fire protection needs, financial factors, records and reports, equipment procurement policies, apparatus, tools, training needs and programs, maintenance needs and facilities, and other equipment necessary for modern fire protection. P.R. T-FIP 101.

T-FIP 103 Construction Codes and Material Rating (2—2) 3

A thorough study of building codes applicable to fire prevention and principles and practices used in various types of building construction. Fire resistance tests and ratings of building materials are also studied. P.R. T-FIP 101.

T-FIP 115 Fire Prevention Programs (3—0) 3

Principles and application of fire prevention related to the community and industrial plants. The development and maintenance of fire prevention programs, educational programs, and inspection programs. Specific applications of related disciplines to fire prevention problems.

T-FIP 135 Training Programs and Methods of Instruction (3—0) 3

Purposes of fire service drills and training programs. The development and operation of the departments' training programs. Facilities and equipment necessary for modern training. Selecting and training the instructional staff. Suitable methods of instruction. P.R. T-FIP 115.

T-FIP 211 Insurance Grading Schedules (3—0) 3

Insurance grading schedules and their principles of application. Methods of analyzing fire hazards and the effects of fire hazards on fire insurance rates. A study of the National Board Grading Schedule is made in detail with other schedules covered briefly. P.R. Consent of adviser.

T-FIP 215 Chemistry of Flammable Materials (3—4) 5

Theories of combustion and extinguishment, including the analysis of flammable materials and the nature of extinguishing agents. The properties of matter affecting fire behavior. The application of the laws and principles of chemistry and physics to the use, storage, and disposal of flammable solids, liquids, gases, and dusts. P.R. CHM 101.

T-FIP 220 Fire Fighting Strategy (3—0) 3

The aspects of tactics and strategy in extinguishing fires. Pre-fire plans, mutual aid problems, techniques of using available equipment and manpower, conflagrations, techniques of predicting fires by fuel analysis. Emphasis will be on developing thinking skill in relation to crises. P.R. T-FIP 102.

T-FIP 225 Fire Protection Law (3—0) 3

A study of law in relation to fire protection. Torts, terms and contracts studied by case method. Liability of fire protection personnel when making inspections, recommendations, fighting fires, and other tasks. Pertinent laws, ordinances, and codes and the responsibilities and powers of the individual or organization concerning enforcement. P.R. T-FIP 102.

T-FIP 230 Hydraulics and Water Distribution Systems (3—3) 4

Mechanics of the flow of fluids through fire hose, nozzles and appliances, pumps, standpipes, watermains, and other devices. Design, testing, and use of nozzles and appliances, pumps, and water distribution systems. Measurement of fluid flow and methods of determining quantities of water available from a distribution system. Practical application of principles. P.R. T-PHY 102, T-MAT 102.

T-FIP 231 Sprinkler and Standpipe Systems (3—3) 4

Types of sprinkler and standpipe systems. System devices and their operation, advantages of sprinkler systems, codes governing installation, water supply requirements, testing, inspection, and maintenance. P.R. T-FIP 230.

T-FIP 235 Inspection Principles and Practices (3—6) 5

A study of the fundamentals of fire inspections including standards, techniques of evaluation of hazards as to degree of the hazard, and practical recommendations. Reports including maps and sketches of each building inspected. On-the-site inspections of buildings to locate hazards and to recommend safe practices and improvements. P.R. T-DFT 101, T-FIP 103.

T-FIP 245 Automatic Alarm and Extinguishing Systems (2—4) 4

A study of the types of fixed extinguishing systems, standard and special fire alarm and fire detection systems. Their operation, installation requirements, testing, inspection and maintenance. P.R. T-PHY 103.

T-MAT 101 Technical Mathematics I (5—0) 5

Fundamental algebraic operations, the rectangular coordinate system and fundamental trigonometric concepts and operations are introduced. C.R. High school credit in geometry or MAT 033.

T-MAT 102 Technical Mathematics II (5—0) 5

A continuation of T-MAT 101. Advanced algebraic and trigonometric topics including quadratics, logarithms, progressions, the binomial expansion, complex numbers, solution of oblique triangles and graphs of the trigonometric functions. P.R. T-MAT 101.

T-PHY 101 Physics I: Basic Mechanics (3—2) 4

An introductory physics course designed primarily to introduce technology majors to the elements of classical mechanics including vectors, particle dynamics, statics, and rotary motion. C.R. T-MAT 101.

T-PHY 102 Physics II: Work, Energy and Power (3—2) 4

A continuation of T-PHY 101 to include study of rigid body dynamics, machines, mechanical transmission of power, heat measurement and transfer, mechanical and thermo properties of matter, and periodic motion. A practical approach is used and applications are emphasized. P.R. T-PHY 101, T-MAT 101.

T-PHY 103 Physics III: Electricity (3—2) 4

Basic theories of electricity, types of electricity, methods of producing, transmitting and transforming electricity. Electron theory, electricity by chemical action, electricity by friction, electricity by magnetism, induction, voltage, amperage, resistance, horsepower, wattage and transformers are major parts of the course. P.R. T-PHY 101, T-MAT 102.

T-PSY 206 Applied Psychology (3—0) 3

A study of the principles of psychology which will be of assistance in the understanding of interpersonal relations on the job. Motivation, feelings and emotions are considered with particular reference to on-the-job problems. Other topics investigated are employee selection, supervision, job satisfaction and industrial conflicts. Attention is also given to personal and group dynamics so that the student may learn to apply the principles of mental hygiene to his adjustment problems as a worker and a member of the general community.

PHYSICAL THERAPY ASSISTING

The need for additional personnel to meet increasing demands for physical therapy services is acute. Recognizing this need, the American Physical Therapy Association has approved the development of courses for education of the physical therapy assistant. Working under the supervision of a professional physical therapist, the assistant will be prepared to offer to the patient services for the prevention and alleviation of physical impairments. This curriculum prepares the assistant to perform skills essential to the contemporary health care team.

DESCRIPTION OF THE CURRICULUM

The Associate of Applied Science degree will be awarded upon successful completion of a six-quarter period of study which combines specialized and general college courses. The classes are held on the College campus with clinical education carefully planned in community health facilities. The history, philosophy and procedures of physical therapy are interwoven with study in the basic physical and social sciences and English.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR PHYSICAL THERAPY ASSISTANT

Course Title			Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER					
ENG	101	English Composition I	3	0	3
BIO	110	Human Anatomy and Physiology	4	2	5
PSY	201	General Psychology	5	0	5
T-PTH	101	Introduction to Physical Therapy	3	3	4
			15	5	17
SECOND QUARTER					
ENG	102	English Composition II	3	0	3
BIO	111	Human Anatomy and Physiology	4	2	5
PSY	202	Human Development	5	0	5
T-PTH	102	Physical Therapy Procedures I	3	6	5
			15	8	18
THIRD QUARTER					
ENG	103	English Composition III	3	0	3
T-BUS	113	Medical Terminology and Vocabulary I	1	2	2
T-PTH	103	Physical Therapy Procedures II	3	6	5
T-PTH	110	Therapeutic Exercises	3	6	5
			10	14	15
FOURTH QUARTER					
SOC	201	Introduction to Sociology	5	0	5
T-BUS	102	Elementary Typewriting I (or elective)	2	3	3
T-BUS	114	Medical Terminology and Vocabulary II	1	2	2
T-PTH	104	Physical Therapy Procedures III	3	9	6
T-PTH	111	Psychology of Adjustment	3	0	3
			14	14	19
FIFTH QUARTER					
SOC	202	Social Problems	5	0	5
SPH	101	Oral Communication	3	0	3
T-PTH	105	Physical Therapy Procedures IV	3	12	7
T-PTH	201	Community Health and Welfare	3	0	3
			14	12	18
SIXTH QUARTER					
T-PTH	202	Seminar in Physical Therapy Procedures	3	0	3
T-PTH	204	Clinical Education	5	24	13
			8	24	16

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

BIO 110 Human Anatomy and Physiology I (4–2) 5
A study of the structure and normal functions of the human body and its systems with emphasis upon the inter-related functions of various parts and systematic processes in the development of basic physiological principles.

BIO 111 Human Anatomy and Physiology II (4–2) 5
A continuation of BIO 110. P.R. BIO 110.

ENG 101 English Composition I (3–0) 3
Study of expository writing with analysis of methods of development; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods.

ENG 102 English Composition II (3–0) 3
Continuing study of composition, emphasizing the techniques of analysis and synthesis in writing, with short stories and novels providing substance. P.R. ENG 101 or consent.

ENG 103 English Composition III (3–0) 3
Intensive study of composition, emphasizing the critical reading of verse and drama and leading into the basic techniques in researching a topic and writing a documented paper. P.R. ENG 102.

PSY 201 General Psychology (5–0) 5
A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology.

PSY 202 Human Development (5–0) 5
Development of the normal child and adolescent, with consideration of the social, biological and cultural influences upon growth. P.R. PSY 201.

SOC 201 Introduction to Sociology (5–0) 5
An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change.

SOC 202 Social Problems (5–0) 5
A study of the major social problems of modern society, including family disorganization, minority groups, and problems associated with industrial and urban development.

SPH 101 Oral Communication (3–0) 3
Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

T-BUS 102 Elementary Typewriting I (2–3) 3
An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

T-BUS 113 Medical Terminology and Vocabulary I (1–2) 2
A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly-used prefixes, suffixes, root words and their combining terms.

T-BUS 114 Medical Terminology and Vocabulary II (1–2) 2
A continuation of T-BUS 113 with greater emphasis on an understanding of terminology and its use in the medical office. P.R. T-BUS 113.

T-PTH 101 Introduction to Physical Therapy (3—3) 4
An introduction to the philosophy, history and techniques of physical therapy, its role in health care and its relationship to other health areas. The student begins a study of basic mechanics and elementary handling of patients.

T-PTH 102 Physical Therapy Procedures I (3—6) 5
The first course of a four-quarter sequence of physical therapy activities. The complete sequence will include basic aseptic techniques, bandaging, locomotion aids and all agents of physical therapy. Opportunities will be provided for laboratory practice and clinical observation and practice in patient care.

T-PTH 103 Physical Therapy Procedures II (3—6) 5
A continuation of T-PTH 102. P.R. T-PTH 102.

T-PTH 104 Physical Therapy Procedures III (3—9) 6
A continuation of T-PTH 103. P.R. T-PTH 103.

T-PTH 105 Physical Therapy Procedures IV (3—12) 7
A continuation of T-PTH 104. P.R. T-PTH 104.

T-PTH 110 Therapeutic Exercise (3—6) 5
Using a background of knowledge in basic anatomy and physiology the student will study the functional anatomy of exercise for treatment procedures in the abnormal (pathology) states and the wide variety of methods of exercises. Clinical practice on other students and observation of the treatment of patients in a clinical setting will be provided.

T-PTH 111 Psychology of Adjustment (3—0) 3
The emphasis in this course is on the psychological implications of inter-personal relationships between the health team worker and the patient. The student will seek to gain an understanding of the emotional reactions of the patient to disease, impairment and handicap.

T-PTH 201 Community Health and Welfare (3—0) 3
This is a one-quarter survey course of community health and welfare resources and their coordination. Other topics include the legal implications of practice and governmental and social influences in health care.

T-PTH 202 Seminar in Physical Therapy Procedures (3—0) 3
Student presentation and discussion of learning experiences gained in the clinical setting.

T-PTH 204 Clinical Education (5—24) 13
Clinical assignments to facilities for practical experience. This will be the concentrated clinical experience for students and will reinforce clinical experiences received in other classes. P.R. 6th quarter standing.

POLICE SCIENCE — CRIMINOLOGY

It is recognized today that the police profession can no longer rely on its past methodology in recruitment, training and performance in the field. The complexities of modern society require that law enforcement officers be knowledgeable in a number of areas. A law enforcement officer must have an understanding of human psychology in order to arbitrate domestic quarrels and properly handle deviant behavior. His deep involvement with the entire administration of justice necessitates an understanding of law. He must have an understanding of the behavior, attitudes and motivations of various ethnic groups. The law enforcement officer must understand emergency procedures and be prepared to administer aid to injured and ill individuals.

A law enforcement officer must be expert in his daily work area; he must develop a competency in investigative techniques, patrol and traffic functions, court procedures, police management, forensic science and the mechanics of arrest, search and seizure.

Above all, the law enforcement officer must understand the meaning and value of ethical concepts relating to honesty, integrity and tolerance.

DESCRIPTION OF CURRICULUM

This curriculum will assist the student in acquiring the necessary understandings required of law enforcement officers by modern society. The approach is both theoretical and practical, with course work which covers all areas of the practical, theoretical and technical application of law enforcement techniques. The courses in this curriculum are designed for law enforcement officers, prospective law enforcement officers and citizens interested in the crime problem. Classes are scheduled so that they can be taken by law enforcement officers during their off-duty hours. The degree Associate in Applied Science in Police Science — Criminology will be awarded upon successful completion of this curriculum.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR POLICE SCIENCE — CRIMINOLOGY

Course Title		Hours per Week		Quarter Hours
		Class	Lab.	Credit
FIRST QUARTER				
ENG 101	English Composition I	3	0	3
MAT	Mathematics Elective	5	0	5
PSC 110	Introduction to Criminology	5	0	5
POL 101	American Government I: National			
	or	5	0	5
HIS 101	World Civilization I			
		18	0	18
SECOND QUARTER				
ENG 102	English Composition II	3	0	3
PSC 101	Police Problems and Practices	5	0	5
PSC 120	Crime in America	2	0	2
PSC 100	First Aid	2	2	3
POL 102	American Government II: State and Local			
	or	5	0	5
HIS 102	World Civilization II			
		17	2	18
THIRD QUARTER				
ENG 103	English Composition III	3	0	3
PSC 102	Race Relations	3	0	3
PSC 103	Police Organization and Administration	5	0	5
PSY 201	General Psychology	5	0	5
		16	0	16

Course Title	Hours per Week		Quarter Hours Credit
	Class	Lab.	
FOURTH QUARTER			
SOC 201 Introduction to Sociology	5	0	5
PSC 210 Juvenile Delinquency	5	0	5
PSC 202 Administration of Justice	5	0	5
PSC 203 Forensic Science	3	2	4
	18	2	19
FIFTH QUARTER			
PSC 204 Traffic Control	3	2	4
PSC 205 Criminal Law Procedures I	5	0	5
PSC 208 Police Patrol Functions	3	2	4
SOC 202 Social Problems	5	0	5
PED 101 Health, Physical Education and Recreation (or Elective)	1	3	2
	17	7	20
SIXTH QUARTER			
PSC 215 Deviant Behavior	5	0	5
PSC 206 Criminal Investigation	5	4	7
PSC 207 Criminal Law Procedures II	5	0	5
	15	4	17

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

ENG 101 English Composition I (3–0) 3

Study of expository writing with analysis of methods of development; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods.

ENG 102 English Composition II (3–0) 3

Continuing study of composition, emphasizing the techniques of analysis and synthesis in writing, with short stories and novels providing substance. P.R. ENG 101 or consent.

ENG 103 English Composition III (3–0) 3

Intensive study of composition, emphasizing the critical reading of verse and drama and leading into the basic techniques in researching a topic and writing a documented paper. P.R. ENG 102.

HIS 101 World Civilization I (5–0) 5

A survey of the history of man—his political, social, religious, intellectual and artistic activities—from the earliest times to the seventeenth century in Europe, Asia and Africa.

HIS 102 World Civilization II (5–0) 5

The concluding part of the survey of world civilization, including the trends from the seventeenth century to the present in Europe, Asia and the Americas.

PED 101 Health, Physical Education and Recreation (1–3) 2

A study of some basic principles of health and personal and community hygiene in addition to three hours per week of participation in individual or team sports (or approved physically-oriented recreational activities).

POL 101 American Government I: National (5–0) 5

The constitutional and legal bases of the national government in relation to its organization, powers, procedures and programs. Attention is given to the instrumentalities of popular control.

POL 102 American Government II: State and Local (5—0) 5

The relationship of state government to the national government; state constitutions; the organization, powers, procedures and programs of the state government; the relationship of state and local governments; the role of local governments; popular control in state and local governments. P.R. POL 101, HIS 151 or consent.

PSC 100 First Aid (2—2) 3

An examination of human anatomy with emphasis on emergency procedures utilized in all types of accidents and illnesses.

PSC 101 Police Problems and Practices (5—0) 5

A contemporary and historical study of policing—its relationship with the public, the press and governmental agencies. Police practices are evaluated in terms of maintaining law and order in the community and protecting life and property.

PSC 102 Race Relations (3—0) 3

A study of concepts and attitudes held by police in relation to brutality, dishonesty and minority groups.

PSC 103 Police Organization and Administration (5—0) 5

A study of the principles of organization and administration of law enforcement; i.e., recruitment, selection, training, discipline and promotion; the functional divisions of the modern police department and the professionalism of police services.

PSC 110 Introduction to Criminology (5—0) 5

A study of the causes and methods of prevention, detection and treatment of crime, encompassing historical and contemporary theories.

PSC 120 Crime in America (2—0) 2

An analysis of the factors involved in the rising crime rate. The responsibilities of the police, prosecution, courts, correctional services and citizens are examined.

PSC 202 Administration of Justice (5—0) 5

A study of the functions and responsibilities of our federal, state and local court systems.

PSC 203 Forensic Science (3—2) 4

An introduction to crime laboratory techniques which stresses the examination of questioned documents, comparative micrography, polygraph examination, firearms identification, pathology, toxicology, immunology and fingerprint techniques.

PSC 204 Traffic Control (3—2) 4

A study of basic police responsibilities for the safe and efficient movement of vehicles and pedestrians. Emphasis is placed on traffic accident investigations, traffic movement and the educational and engineering elements of police traffic enforcement.

PSC 205 Criminal Law Procedures I (5—0) 5

A study of substantive crimes and their punishment, parties to crime, rules of evidence and criminal procedure.

PSC 206 Criminal Investigation (5—4) 7

A course in investigative methods and techniques and conduct at crime scenes. The search for, collection and preservation of physical evidence and the role of the crime laboratory are studied. Specific criminal offenses, including juvenile, are used as examples. The use of interrogation techniques within the framework of recent court decisions is emphasized.

PSC 207 Criminal Law Procedures II (5—0) 5

An in-depth study of the laws of arrest, search and seizure within the framework of recent court decisions.

PSC 208 Police Patrol Functions (3—2) 4

Police patrol duties and responsibilities including the distribution and supervision of police forces, patrol procedures, communications, safety, emergencies and traffic enforcement.

PSC 210 Juvenile Delinquency (5–0) 5

An analysis of juvenile delinquency as it relates to the family, school, church, police and peer group. Etiological factors of delinquency and rehabilitative methods are discussed.

PSC 215 Deviant Behavior (5–0) 5

The biological, intellectual, emotional and cultural dynamics of human behavior are examined with emphasis on deviant developmental patterns.

PSY 201 General Psychology (5–0) 5

A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology.

SOC 201 Introduction to Sociology (5–0) 5

An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change.

SOC 202 Social Problems (5–0) 5

A study of the major social problems of modern society, including family disorganization, minority groups and problems associated with industrial and urban development.

SECRETARIAL SCIENCE CURRICULA

Executive Secretary
Legal Secretary
Medical Secretary

EXECUTIVE SECRETARY

Secretaries are valuable to business, industry, government and the professions. The demand for good secretaries far exceeds the supply; thus, education in this occupational field provides many opportunities to work in pleasant and attractive surroundings on interesting things for appreciative people.

The private secretary is the boss's right hand and must bring to the position, along with basic skills of shorthand, typing and English, an understanding of office procedure, accounting, human relations and the place of business and industry in the American economic system.

DESCRIPTION OF CURRICULUM

The degree Associate in Applied Science in Executive Secretarial Science will be awarded upon successful completion of this curriculum. The program of studies provides for classes in shorthand, typing, English, business correspondence, business law and related areas.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR EXECUTIVE SECRETARY

Course		Title	Hours per Week		Quarter Hours
			Class	Lab.	Credit
FIRST QUARTER					
T-ENG	100	*Speed Reading	2	0	2
T-ENG	101	Communications I	3	0	3
T-BUS	102	*Elementary Typewriting I (or Elective)	2	3	3
T-MAT	110	Business Arithmetic	3	0	3
BUS	101	Introduction to Business	3	0	3
T-BUS	106	*Shorthand I (or Elective)	3	2	4
			16	5	18
SECOND QUARTER					
T-ENG	800	Spelling	2	0	2
ENG	101	English Composition I	3	0	3
T-BUS	103	Elementary Typewriting II	2	3	3
MAT	111	Business Mathematics	3	0	3
T-BUS	107	Shorthand II	3	2	4
ECO	201	Economics I	3	0	3
			16	5	18
THIRD QUARTER					
ENG	102	English Composition II	3	0	3
T-BUS	104	Intermediate Typewriting I	2	3	3
T-BUS	108	Shorthand III	3	2	4
BUS	120	Principles of Accounting I	5	2	6
SPH	101	Oral Communication	3	0	3
			16	7	19
FOURTH QUARTER					
T-BUS	206	Dictation and Transcription I	3	2	4
HIS	152	American History II	3	0	3
T-BUS	204	Intermediate Typewriting II	2	3	3
T-BUS	112	Filing	1	2	2
BUS	115	Business Law I	3	0	3
T-PSY	112	Personality Development	3	0	3
			15	7	18

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*Not required if student can pass proficiency test in this area

Course	Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIFTH QUARTER				
T-BUS 110	Office Machines	2	2	3
T-ENG 206	Business Communication	3	0	3
T-BUS 207	Dictation and Transcription II	3	2	4
T-BUS 205	Advanced Typewriting	2	3	3
	Elective	3	0	3
		13	7	16
SIXTH QUARTER				
T-BUS 214	Secretarial Procedures	3	0	3
T-BUS 208	Dictation and Transcription III	3	2	4
T-BUS 271	Office Management	3	0	3
T-BUS 210	Advanced Office Machines	2	2	3
T-EDP 104	Introduction to Data Processing	3	2	4
		14	6	17

LEGAL SECRETARY

The legal secretary is an essential worker in any law office. The duties of a legal secretary may consist of filing, taking dictation, transcribing letters, briefs and reports, meeting office callers, screening telephone calls and scheduling appointments. The legal secretary needs to have not only the usual secretarial skills but also a knowledge of legal terminology and procedures. Opportunities for the graduate exist in a variety of secretarial positions in the legal profession. Positions are also available in federal, state and local governmental agencies.

DESCRIPTION OF CURRICULUM

The curriculum is designed to offer the necessary secretarial skills in typing, dictation, transcription and filing. This training in secretarial skills is supplemented by related courses in mathematics, accounting, business law and legal terminology. The degree Associate in Applied Science in Legal Secretarial Science will be awarded upon successful completion of the curriculum.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR LEGAL SECRETARY

Course	Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
T-ENG 100	*Speed Reading	2	0	2
T-ENG 101	Communications I	3	0	3
T-BUS 102	*Elementary Typewriting I (or Elective)	2	3	3
T-MAT 110	Business Arithmetic	3	0	3
BUS 101	Introduction to Business	3	0	3
T-BUS 106	*Shorthand I (or Elective)	3	2	4
		16	5	18
SECOND QUARTER				
T-ENG 800	Spelling	2	0	2
ENG 101	English Composition I	3	0	3
T-BUS 103	Elementary Typewriting II	2	3	3
MAT 111	Business Mathematics	3	0	3
T-BUS 107	Shorthand II	3	2	4
ECO 201	Economics I	3	0	3
		16	5	18

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*Not required if student can pass proficiency test in this area

Course Title			Hours per Week Class	Lab.	Quarter Hours Credit
THIRD QUARTER					
ENG	102	English Composition II	3	0	3
T-BUS	104	Intermediate Typewriting I	2	3	3
BUS	120	Principles of Accounting I	5	2	6
T-BUS	108	Shorthand III	3	2	4
T-BUS	117	Legal Terminology and Vocabulary	1	2	2
			14	9	18
FOURTH QUARTER					
T-BUS	204	Intermediate Typewriting II	2	3	3
BUS	115	Business Law I	3	0	3
SPH	101	Oral Communication	3	0	3
T-BUS	112	Filing	1	2	2
T-BUS	206	Dictation and Transcription I	3	2	4
T-PSY	112	Personality Development	3	0	3
			15	7	18
FIFTH QUARTER					
T-ENG	206	Business Communication	3	0	3
T-BUS	216	Advanced Legal Typewriting	2	3	3
BUS	116	Business Law II	3	0	3
T-BUS	110	Office Machines	2	2	3
T-BUS	207	Dictation and Transcription II	3	2	4
			13	7	16
SIXTH QUARTER					
T-BUS	214	Secretarial Procedures	3	0	3
T-BUS	217	Legal Environment of Business	3	0	3
T-BUS	271	Office Management	3	0	3
HIS	152	American History II	3	0	3
T-BUS	208	Dictation and Transcription III	3	2	4
T-BUS	210	Advanced Office Machines	2	2	3
			17	4	19

MEDICAL SECRETARY

The demand for well qualified medical secretaries in an ever-expanding medical profession is becoming acute. The purpose of this curriculum is to outline a training program that will provide specialized training in the accepted secretarial procedures required by the medical profession. The duties of a medical secretary may consist of filing, taking dictation, transcribing letters, memoranda and reports, meeting office callers, screening telephone calls and scheduling appointments. The graduate may enter a secretarial position in physicians' offices, private and public hospitals, public health agencies, and drug and pharmaceutical companies.

DESCRIPTION OF CURRICULUM

The Medical Secretary curriculum is designed to offer the student the necessary secretarial skills for employment in medical or health-related agencies. The graduate will have a knowledge of medical terminology and skills in typing, taking dictation and accurate transcription. Special training in secretarial subjects will be supplemented by related courses in mathematics, accounting and personality development. The degree Associate in Applied Science in Medical Secretarial Science will be awarded upon successful completion of the curriculum.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR MEDICAL SECRETARY

Course Title	Hours per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER			
T-ENG 100 *Speed Reading	2	0	2
T-ENG 101 Communications I	3	0	3
T-BUS 102 *Elementary Typewriting I (or Elective)	2	3	3
T-MAT 110 Business Arithmetic	3	0	3
BUS 101 Introduction to Business	3	0	3
T-BUS 106 *Shorthand I (or Elective)	3	2	4
	16	5	18
SECOND QUARTER			
T-ENG 800 Spelling	2	0	2
ENG 101 English Composition I	3	0	3
T-BUS 103 Elementary Typewriting II	2	3	3
MAT 111 Business Mathematics	3	0	3
T-BUS 107 Shorthand II	3	2	4
ECO 201 Economics I	3	0	3
	16	5	18
THIRD QUARTER			
ENG 102 English Composition II	3	0	3
T-BUS 104 Intermediate Typewriting I	2	3	3
T-BUS 108 Shorthand III	3	2	4
BUS 120 Principles of Accounting I	5	2	6
T-BUS 113 Medical Terminology and Vocabulary I	1	2	2
	14	9	18
FOURTH QUARTER			
T-BUS 114 Medical Terminology and Vocabulary II	1	2	2
BIO 110 Human Anatomy and Physiology I	4	2	5
T-BUS 204 Intermediate Typewriting II	2	3	3
T-BUS 218 Medical Ethics and Law	3	0	3
T-BUS 112 Filing	1	2	2
T-BUS 110 Office Machines	2	2	3
	13	11	18
FIFTH QUARTER			
T-ENG 206 Business Communication	3	0	3
T-BUS 209 Advanced Medical Typewriting	2	3	3
T-BUS 210 Advanced Office Machines	2	2	3
T-BUS 212 Medical Dictation and Transcription	3	2	4
Elective	3	0	3
	13	7	16
SIXTH QUARTER			
SPH 101 Oral Communication	3	0	3
T-BUS 214 Secretarial Procedures	3	0	3
T-BUS 211 Medical Transcription	2	2	3
T-BUS 271 Office Management	3	0	3
T-PSY 112 Personality Development	3	0	3
HIS 152 American History II	3	0	3
	17	2	18

*Not required if student can pass proficiency test in this area

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

BIO 110 Human Anatomy and Physiology I (4–2) 5

A study of the structure and normal functions of the human body and its systems with emphasis upon the inter-related functions of various parts and systematic processes in the development of basic physiological principles.

BUS 101 Introduction to Business (3–0) 3

A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management. Choosing a location and product line, design, production, sales and personnel staffing are topics studied.

BUS 115 Business Law I (3–0) 3

A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered wherever applicable.

BUS 116 Business Law II (3–0) 3

A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 115.

BUS 120 Principles of Accounting I (5–2) 6

Introductory accounting principles designed to provide an understanding of accounting data. Accumulating, summarizing, analyzing and reporting information about services and mercantile enterprises are emphasized. Individual ownerships and partnerships are the business organizations stressed. Also included is a study of payrolls and payroll taxes.

ECO 201 Economics I (3–0) 3

Basic economics with attention to central problems of price, competition and money; supply and demand; business organizations; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

ENG 101 English Composition I (3–0) 3

Study of expository writing with analysis of methods of development; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods.

ENG 102 English Composition II (3–0) 3

Continuing study of composition, emphasizing the techniques of analysis and synthesis in writing, with short stories and novels providing substance. P.R. ENG 101 or consent.

HIS 152 American History II (3–0) 3

The intermediate survey of the American development from 1800 to 1899.

MAT 111 Business Mathematics (3–0) 3

A continuation of mathematics applied to business. An introduction to statistical methods, simple and compound interest, discounts, debts extinction and expense distribution calculations.

SPH 101 Oral Communication (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversation, interviews and conferences.

T-BUS 102 Elementary Typewriting I (2–3) 3

An introduction to the touch typewriting system with emphasis on correct techniques, mastery of the keyboard, simple business correspondence, tabulation and manuscripts.

T-BUS 103 Elementary Typewriting II (2–3) 3

Instruction emphasizes the development of speed and accuracy with further mastery of correct typewriting techniques. These skills and techniques are applied in tabulation, manuscript and correspondence. Speed requirement, 40 words per minute for five minutes. P.R. T-BUS 102 or the equivalent.

T-BUS 104 Intermediate Typewriting I (2–3) 3

Emphasis is placed on production typing problems and speed building. Attention is given to the development of the student's ability to function as an expert typist, producing mailable copies. The production units are tabulation, manuscripts, correspondence and business forms. Speed requirements, 50 words per minute for five minutes. P.R. T-BUS 103.

T-BUS 106 Shorthand I (3–2) 4

A beginning course in the theory and practice of reading and writing shorthand. The emphasis is on phonetics, penmanship, word families, brief forms and phrases.

T-BUS 107 Shorthand II (3–2) 4

A continued study of theory with greater emphasis on dictation and elementary transcription. P.R. T-BUS 106 or the equivalent.

T-BUS 108 Shorthand III (3–2) 4

Theory and speed building. Introduction to office style dictation. Emphasis on development of speed in dictation and accuracy in transcription. P.R. T-BUS 107.

T-BUS 110 Office Machines (2–2) 3

A general survey of business and office machines. Students will receive training in techniques, processes, operation and application of ten-key adding machines, full-keyboard adding machines and calculators.

T-BUS 112 Filing (1–2) 2

The fundamentals of indexing and filing. Theory and practice are combined by the use of miniature letters, filing boxes and guides. Topics studied include alphabetic name, geographic, subject and numerical filing.

T-BUS 113 Medical Terminology and Vocabulary I (1–2) 2

A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly-used prefixes, suffixes, root words and their combining forms.

T-BUS 114 Medical Terminology and Vocabulary II (1–2) 2

A continuation of T-BUS 113 with greater emphasis on an understanding of terminology and its use in the medical office. P.R. T-BUS 113.

T-BUS 117 Legal Terminology and Vocabulary (1–2) 2

An intensive course of study in legal terminology and vocabulary, including definitions, usage, derivations and spelling.

T-BUS 204 Intermediate Typewriting II (2–3) 3

This course is designed to increase the student's speed and accuracy on straight copy and production typing and review the fundamental principles of various types of production work, such as: correspondence, manuscript and tabulation. P.R. T-BUS 104.

T-BUS 205 Advanced Typewriting (2–3) 3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and in typing projects that closely approximate the work appropriate to the field of study. These projects include review of letter forms, methods of duplication, statistical tabulation, and the typing of reports, manuscripts and legal documents. Speed requirement, 60 words per minute for five minutes. P.R. T-BUS 204.

T-BUS 206 Dictation and Transcription I (3–2) 4

This course develops the skills of taking dictation and transcribing at the typewriter materials appropriate to the course of study. Topics include a review of the theory and the dictation of familiar and unfamiliar material at varying rates of speed. A minimum dictation rate on new materials of 100 words per minute is required for five minutes. P.R. T-BUS 108.

T-BUS 207 Dictation and Transcription II (3–2) 4

Covering materials appropriate to the course of study, the student develops the accuracy, speed and vocabulary which will enable her to meet the stenographic requirements of business and professional offices. A minimum dictation rate on new material of 110 words per minute. P.R. T-BUS 206.

T-BUS 208 Dictation and Transcription III (3–2) 4

Principally a speed building course, covering materials appropriate to the course of study, with emphasis on speed as well as accuracy. A minimum dictation rate on new material of 120 words per minute is required for five minutes. P.R. T-BUS 207.

T-BUS 209 Advanced Medical Typewriting (2–3) 3

Emphasis is placed on the development of individual production rates. The student learns the techniques needed in planning and typing projects that closely approximate the work appropriate to the field of study. These projects include hospital reports and case histories. P.R. T-BUS 204.

T-BUS 210 Advanced Office Machines (2–2) 3

Instruction is given to students in the operation of duplicating equipment and dictating and transcribing machines. P.R. T-BUS 110, T-BUS 104.

T-BUS 211 Medical Transcription (2–2) 3

The student is required to complete production units on the typewriter from dictation-transcription machines of medical correspondence and documents such as case histories, articles, and hospital reports. P.R. T-BUS 110, T-BUS 104.

T-BUS 212 Medical Dictation and Transcription (3–2) 4

This course emphasizes taking dictation using medical terminology, the ability to transcribe such dictation, and drills and exercises constructing medical shorthand outlines. P.R. T-BUS 108.

T-BUS 214 Secretarial Procedures (3–0) 3

This course is designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These responsibilities include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims.

T-BUS 216 Advanced Legal Typewriting (2–3) 3

This course is designed to further develop individual production rates, with emphasis on the planning and typing of projects appropriate to the field of study. These projects include contracts, agreements and powers of attorney. P.R. T-BUS 204.

T-BUS 217 Legal Environment of Business (3–0) 3

A study of the powers, policies, methods and procedures used by federal and state administrative agencies in promoting and regulating business enterprises. The course includes a consideration of the constitutional and statutory limitations on these commissions and judicial review of administrative action. P.R. BUS 116.

T-BUS 218 Medical Ethics and Law (3–0) 3

Principles of office conduct, ethical responsibility in regard to information acquired, and the obligation and responsibilities of the medical office assistant are studied. Laws governing medical practice are included.

T-BUS 271 Office Management (3–0) 3

This course presents the fundamental principles and successful practices used in getting office work accomplished. Case problems are used in making effective solutions to office management problems. (To be taken during 5th or 6th quarter only.)

T-EDP 104 Introduction to Electronic Data Processing (3–2) 4

The fundamental concepts and operational principles of data processing systems are presented as an aid in developing the basic knowledge prerequisite for a future detailed study of computer systems and programming. This course provides a general knowledge of computer systems, data processing terminology, computer applications, flow charting, types of computer instructions and programming in basic language.

T-ENG 100 Speed Reading (2–0) 2

The approach includes a concentrated effort to improve the student's ability to comprehend that which he reads with greater rapidity and accurateness. Special procedures are used to broaden the span of sentence recognition, to increase eye coordination, and to improve the common faults of a slow reader.

T-ENG 101 Communications I (3–0) 3

This course is designed to aid the student in the improvement of writing and self-expression with emphasis on practical application of grammar and sentence structure. Vocabulary building, as well as a functional approach to writing, is stressed by use of projected materials with emphasis on the mechanics of construction in all areas of good English.

T-ENG 206 Business Communication (3–0) 3

This course develops skills in techniques used in writing business communications. Emphasis is placed on writing effective letters and reports. Action-getting sales letters and letters involving credit, collections, adjustments, complaints, orders, acknowledgements and remittances are covered. P.R. T-ENG 101, T-BUS 102 or equivalent.

T-ENG 800 Spelling (2–0) 2

This course is designed to increase the student's proficiency in spelling, word division and word usage and to train him in the intelligent use of the dictionary.

T-MAT 110 Business Arithmetic (3–0) 3

A study of fundamental processes: addition, subtraction, multiplication and division of whole numbers and common and decimal fractions. The manipulation and application of per cent, essentials of algebraic operations and per cents as applied to the income statement are also studied. P.R. Satisfactory score on entrance math test.

T-PSY 112 Personality Development (3–0) 3

This course is designed to help the student recognize the importance of the physical, intellectual, social and emotional dimensions of personality. Emphasis is placed on grooming and methods of personality improvement.

PART FIVE

THE ASSOCIATE IN ARTS DEGREE PROGRAM

Descriptions of

Liberal Arts Courses

and

Curricula

Leading To The

ASSOCIATE IN ARTS DEGREE

THE TRANSFER-LIBERAL ARTS PROGRAM

I. DESCRIPTION OF THE PROGRAM

The rapid growth of population in the United States and the demand for education beyond the high school have resulted in increasing numbers of students seeking admission to colleges and universities throughout the nation. To help meet the needs of these students, community colleges, which offer the first two years of baccalaureate degree work, are being established in all sections of the country. Central Piedmont Community College, one of the community colleges in the North Carolina system, is dedicated to the task of assisting students toward their educational goals.

In the first two years of college, students secure a general education in areas of humanities, social studies, science and mathematics; in addition, they begin specialized work in their own particular fields of interest. It is the aim of Central Piedmont Community College to provide quality instruction in these areas for transfer credit to senior institutions. Central Piedmont Community College provides professional counseling and a faculty advisory system to help the student plan his program for transfer to the college or university of his choice.

II. GENERAL INFORMATION

The student should consult the general information brochure for general school policies. The following information is especially relevant to the program.

Admission

The student should forward, as early as possible in advance of the date of registration, an application and a high school transcript to the Office of Student Services. Transcripts of any completed college work should be received prior to registration. While students may be processed to the date of registration, an early application assures adequate time for processing and counseling.

Central Piedmont Community College follows an "open door" policy and does not impose restrictive standards for admission to the College. All degree curricula, however, require high school graduation or the equivalent. Before any student is permitted to register for classes leading to a degree, he must take the School and College Ability Test (SCAT), a mathematics test and an English test. A student with satisfactory scores will be permitted to enter the curriculum of his choice. When scores on the tests indicate a lack of readiness to commence college-level work, the student will be assigned to developmental courses or to the programmed learning laboratory.

Units of Credit and Course Descriptions

Central Piedmont Community College is on a quarter system. One unit of credit is equal to one class-hour meeting per week. In the section on course descriptions in subsequent pages, there appear the course number, the title of the course and the hours of credit for the course. The number of lecture hours and the number of laboratory hours are shown in parentheses. When the laboratory is required, one credit hour will equal at least two hours of laboratory time, as appropriate to the course. The letters P.R. indicate the prerequisite. The letters C.R. indicate a corequisite of the course. Either may be waived by the Liberal Arts Dean.

Probation

If a student has a cumulative quality-point average of 2.0 or lower at the end of any quarter, he will be placed on probation and asked to report to his adviser for counseling. The counselor will attempt to identify the problems of the student, and he may direct the student to a program for which he is better qualified. (See the general information section for the minimum quality-point average required at various stages of progress toward the Associate in Arts Degree.)

Requirements for the Degree

The student must complete a minimum of ninety-six quarter hours of course work to qualify for the Associate Degree. The student must have a quality-point average of 2.0 (or "C") to be eligible for graduation.

The student is eligible for the Associate in Arts Degree when he has completed the required ninety-six quarter hours for graduation, including the minimum hours in each area listed below.

Communications	9 Quarter Hours

English Composition 101, 102, 103
(Required of all students.)

Humanities	9 Quarter Hours

This requirement is met by a sequence in language or some combination of courses in the following areas: Literature, Philosophy, Art or Music.

Social Science	10 Quarter Hours
Biological Science, Physical Science and Mathematics	20 Quarter Hours

The requirement is met by taking a minimum of two of the three fields. At least one year (ten hours) must be taken in a laboratory science, either biological or physical.

SAMPLE TWO-YEAR CURRICULA FOR LIBERAL ARTS AND CERTAIN PRE-PROFESSIONAL AREAS

NOTE: *These are sample curricular patterns. They are not meant to be prescriptive for any particular student, nor are they minimum requirements. An individual student's schedule may vary from these modal patterns. Each student will structure his own curricular pattern in conference with his adviser. His high school background, scholastic aptitude, vocational goal and choice of a four-year college or university (to which he plans to transfer) will be considered as factors shaping his particular curricular design.*

Liberal Arts	Quarter Hours of Credit
English Composition	9
World Civilization	10
Literature (ENG 201-202, or ENG 205-206)	10
Modern Language (through Intermediate)	9 to 18
Mathematics 101-102*, or 110-120	10
Laboratory Science	20
Elective in Major	15
Free electives to complete 96 hours	

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*Math. 101-102 not applicable to mathematics major

	Quarter Hours of Credit
Pre-Agriculture (and Forestry)	
English Composition	9
Mathematics (110 level and above)	15
History	10
Biology	15
Social Science Electives	10
Modern Language or Humanities	9 or 10
General Chemistry	15
Economics	9
Electives to complete 96 hours	
Pre-Business and Public Administration	
English Composition	9
History	10
Psychology	5
Economics	9
Mathematics (through 110)	5, 10 or 15*
Laboratory Science	10*
Modern Language (through Intermediate)	9
Accounting	12
Business Electives	9
Social Science electives to complete 96 hours	
Pre-Dental	
English Composition	9
World Civilization	10
Modern Language or Humanities	10
Mathematics (110 level and above)	10
General Chemistry	15
Organic Chemistry	12
Biological Sciences	10
Psychology	5
Electives to complete 96 hours	
Pre-Engineering	
English Composition	9
World Civilization	10
Humanities	10
Mathematics (110 level and above)	30
Technical Drafting	7
General Chemistry	15
General Physics	15
Economics	9
Pre-Journalism	
English Composition	9
History	10
American Government	5
Psychology	5
Economics	9
Mathematics	10
Laboratory Science	10
Modern Language (through Intermediate)	9 to 18
Literature (ENG 201-202, or 205-206)	10
Speech	3
Social Science Electives	10
Free electives to complete 96 hours	

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*A total of 20 hours of mathematics and laboratory science is suggested

	Quarter Hours of Credit
Pre-Law	
English Composition	9
Modern Language (through Intermediate)	9 to 18
Laboratory Science	10
Mathematics	10
History	10
Political Science	15
Economics	9
Sociology	9
Speech	6
Psychology	5
Literature	5
Electives to complete 96 hours	
Pre-Medical	
English Composition	9
World Civilization	10
Modern Language (through Intermediate)	9 to 18
Mathematics (110 level and above)	10
General Chemistry	15
Organic Chemistry	12
Biological Sciences	20
General Psychology	5
Science electives to complete 96 hours	
Pre-Pharmacology (one year only, except under special advisement)	
English Composition	9
World Civilization	10
Foreign Language (through Intermediate)	9 to 18
Mathematics (110 level and above)	10
General Chemistry	15
Pre-Social Work	
English Composition	9
World Civilization	10
Laboratory Science	10
Mathematics	10
Modern Language or Humanities	10
Speech	6
Sociology	10
Psychology	10
Political Science	10
Electives to complete 96 hours	
***Pre-Teaching (Elementary)**	
English Composition	9
World Civilization	10
Geography	5 to 10
Mathematics	10
Laboratory Science	10
Art	3 to 9
Music	3
American History	10
Political Science	5
Modern Language or Humanities	10
Introduction to Education	5
Educational Psychology	5
General Psychology	5
Electives to complete 96 hours	

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*Check catalog of senior institution to which student plans transfer upon graduation from CPCC. Requirements will vary.

	Quarter Hours of Credit
Pre-Teaching (Secondary)	
English Composition	9
World Civilization	10
American History	10
*Mathematics	10
Laboratory Science	10
Speech	6
Modern Language or Humanities	10
Introduction to Education	5
General Psychology	5
Educational Psychology	5
Major electives to complete 96 hours	
Pre-Textile	
English Composition	9
Literature	10
General Chemistry	15
Mathematics (110-120-150-201-202-203)	30
General Physics (201-202-203)	15
American Government	5
World Civilization I	5
General Psychology	5
Introduction to Philosophy	5

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*Math. 101-102 will suffice for many non-math majors. However, persons planning to major in math or physical science should begin with Math. 110.

Transfer of Credit

The community college advisory committee, including representatives of state-supported colleges and the University, has worked with the Department of Community Colleges and Central Piedmont Community College to assist in the development of curricula acceptable to the senior institutions of the state. Consequently, courses taken at Central Piedmont should transfer in grade and credit to the institution as applicable to the curriculum for which such courses were intended. The student should be able to transfer to the senior institution with junior status after completing two years of credit work at Central Piedmont. Counselors and faculty members are ready to assist the student in course selection. It is the responsibility of the student, however, to familiarize himself with the catalog of the senior institution to which he will transfer, and to make periodic checks of his progress while completing freshman and sophomore requirements.

Explanation of Course Listings

Sample course listing:

BUS 120 Accounting I F,W,S,SS (5—2) 6

The three capitalized letters and the number which follows (BUS 120) are the abbreviated designation used for the course (Accounting I). The F,W,S,SS indicate that the course is offered during the Fall, Winter, Spring and Summer Session Quarters each year. If the words "even" or "odd" had followed, the course would be held only every other year. The year offered is determined by the last digit in the year. This offering may be made in either day or evening classes.

The (5—2) means that the class has five hours of lecture and two hours of laboratory work per week. The "6" at the end indicates the number of credit hours for completion of the course.

III. DESCRIPTION OF COURSES BY DEPARTMENT

ACCOUNTING DEPARTMENT

Objectives — The accounting courses are designed to develop the student's knowledge and understanding of the fundamental and advanced principles and concepts of accounting; to develop manual skills in recording and in machine operation as needed on the job; and, to familiarize the student with the areas in which accounting is used, its importance in business, and the manner in which all areas of business depend on accounting records as a strong tool.

BUS 120 Principles of Accounting I F,W,S,SS (5—2) 6

Introductory accounting principles designed to provide an understanding of accounting data. Accumulating, summarizing, analyzing, and reporting information about service and mercantile enterprises are emphasized. Individual ownerships and partnerships are the business organizations stressed. Also included is a study of payrolls and payroll taxes.

BUS 121 Principles of Accounting II F,W,S,SS (5—2) 6

Emphasis is placed on recording, summarizing and interpreting data for management control rather than on bookkeeping skills. Accounting services are shown as they contribute to the recognition and solution of management problems. The corporate form of business is studied. P.R. BUS 120.

BUS 222 Intermediate Accounting I F,S (5—2) 6

An introduction to and review of fundamental processes of accounting. Emphasis is placed upon a thorough working knowledge and understanding of financial statements. Individual items in the balance sheet and income statement are analyzed and evaluated. P.R. BUS 121.

BUS 223 Intermediate Accounting II W,SS (5—2) 6

A continuation of the study begun in BUS 222. The application of accounting principles and concepts to account evaluation and income determination is emphasized. Special problems peculiar to corporations and analyses of financial reports are considered. P.R. BUS 222.

MAT 111 Business Mathematics F,W,S,SS (3—0) 3

A review of basic mathematics in business; interest and bank discounts, payroll records, taxes, retailing costs, markups and discounts, compound interest and annuities.

BUSINESS ADMINISTRATION DEPARTMENT

Objectives — The business administration courses are designed to develop the student's knowledge and understanding of principles of organization and management; the role of business in the nation's economy; and human relations in business operations.

BUS 101 Introduction to Business F,W,S,SS (3—0) 3

A comprehensive introduction to business operations and organization with an analysis of forms of business ownership, business functions and problems of management.

BUS 115 Business Law I F,W,S,SS (3—0) 3

A general course to acquaint the student with our court system and the fundamentals of business law on contracts, negotiable instruments and agency. Uniform Commercial Code is considered whenever applicable.

BUS 116 Business Law II F,W,S,SS (3—0) 3

A continuing study of business laws governing sales, bailments, partnerships, corporations, insurance and property. The Uniform Commercial Code is considered wherever applicable. P.R. BUS 115.

BUS 235 Business Management F,W,S,SS (4–0) 4

A study in depth of the principles of management. The major functions of planning, organizing, staffing, directing and controlling a firm's operations are carefully organized. Case studies and a company analysis are integral parts of the course.

ECO 201 Economics I F,W,S,SS (3–0) 3

Basic economics with attention to control problems of price, competition and money; supply and demand; business organization; firm and family income; labor and industrial relations; government and the economy; gross national product; relationship of income to expenditures; business cycles.

ECO 202 Economics II F,W,S,SS (3–0) 3

Historical development of economic thought; creation of money; banking and the Federal Reserve System; monetary and fiscal policy; price, utility and costs in selected industries; competition and monopoly.

ECO 203 Economics III F,W,S,SS (3–0) 3

Distribution of income; factors of production; wages and collective bargaining; interest and capital; profits and incentives, international payments, trade and gold flow; current economic problems. P.R. ECO 201.

BIOLOGY DEPARTMENT

Objectives — The biology curriculum is designed to prepare students for professional careers in the life sciences and related areas; to teach students to apply the scientific method, to think logically and systematically, to have an open-minded attitude in interpreting data and to be thorough in considering all aspects of a problem; to impart knowledge of the fauna and flora of our region for aesthetic as well as functional usage; to understand the role of the life sciences in mastering environments; to help students recognize themselves as highly complex members of the living world for which they are responsible; to help students become more knowledgeable citizens, parents and leaders.

BIO 101 Biological Science F,W,S,SS (3–4) 5

A foundation course designed to introduce the fundamentals of biological sciences — principles and theories, the nature of matter, the organization of protoplasm, a brief survey of plant and animal kingdoms, metabolism, growth, reproduction, responsiveness, adaptation and evolution.

BIO 110 Human Anatomy and Physiology I F (4–2) 5

A study of the structure and normal functions of the human body and its systems with emphasis upon the inter-related functions of various parts and systematic processes in the development of basic physiological principles.

BIO 111 Human Anatomy and Physiology II W (4–2) 5

A continuation of BIO 110. P.R. BIO 110 or consent.

BIO 120 General Botany F,W,S (3–4) 5

An introductory study of the structure, physiology, reproduction and taxonomy of green and non-green plants, and a survey of plant genetics and ecology. P.R. BIO 101.

BIO 130 General Zoology F,W,S (3–4) 5

A study of the chief groups of animals in evolutionary sequence and a survey of animal histology, physiology, homology, ecology, and taxonomy. Laboratory studies of typical animal groups. P.R. BIO 101.

BIO 150 General Bacteriology (Microbiology) S,SS (4–2) 5

An introductory course in general bacteriology with a survey of microscopical plant and animal forms with emphasis upon the morphology, physiology and ecology of bacteria. The nature and activities of common micro-organisms of humans, soil, water, food and milk. P.R. BIO 101 or consent.

BIO 201 Introduction to Entomology S (3–4) 5

A basic course designed to cover the fundamentals of insect classification, development, food habits and controls. P.R. BIO 101.

BIO 210 Vertebrate Zoology F (3–4) 5

An introduction to the local vertebrate fauna with emphasis on life history, ecology, systematics and behavior. Includes principles of vertebrate anatomy, physiology, histology, embryology, classification and homology. P.R. BIO 130.

BIO 220 General Ecology SS (3–4) 5

A study of the structure and function of nature. Emphasis is placed upon energy flow, biogeochemical cycles, relationships, habitats and economic importance of organisms. P.R. BIO 120, BIO 130 or consent.

DRAFTING DEPARTMENT

Objectives — The drafting curriculum is designed to develop the student's knowledge and understanding of the fundamental principles and concepts of drafting; to develop manual skills in drawing and using drafting equipment; to familiarize the student with the areas in which drafting is used, its importance in industry, and the manner of its use.

DFT 101 Technical Drafting I F,W,S,SS (2–4) 3

An introduction to drafting and design practices and principles. The attainment of the basic skills and techniques of drafting including use of drafting equipment, lettering, freehand, orthographic and pictorial sketching, geometric construction, orthographic instrument drawing of principal views, and standards and practices of dimensioning and noting. Methods of reproducing, filing and storing drawings are studied, and the student is introduced to "working drawings."

DFT 204 Descriptive Geometry W,SS (2–4) 4

Graphic analysis of space problems involving points, lines, planes, connectors and combinations of these. Practical design problems are stressed with analytical verification when applicable. Visualization is stressed on every problem. P.R. DFT 101.

FINE ARTS DEPARTMENT

Objectives — The fine arts courses are designed to provide opportunities to the greatest possible number of students to share in the heritage of the fine arts culture of the human race and to contribute to this culture; to create a balance between creative skills and academic studies and to promote in the student a comprehension of his responsibilities to the society and culture in which he lives.

ART

ART 105 History of Art S (3–0) 3

An introduction and orientation to a comprehensive picture of important aesthetic principles. A survey of the past which encourages the student to develop his own purposes and style. Lecture-discussion documented with paintings, sculpture, reproductions and films.

FRENCH

FRE 101 *Elementary French I F,W,S (3–1) 3

Basic elements of French in composition, reading and conversation designed for beginning students. (Does not satisfy humanities requirement.)

FRE 102 *Elementary French II W,S,SS (3–1) 3

Continuation of FRE 101 in basic elements of French in composition, reading and conversation, designed for beginning students. P.R. FRE 101 or consent. (Does not satisfy humanities requirement.)

FRE 103 *Elementary French III F,S (3–1) 3

Continuation of FRE 102 in basic elements of French in composition, reading and conversation, designed for beginning students. P.R. FRE 102 or consent. (Does not satisfy humanities requirement.)

FRE 151 Intermediate French I F (3–1) 3

Intensive review of basic grammar and vocabulary with emphasis on mastery of idiomatic forms and grammatical structure in dialogues and short stories. P.R. FRE 103 or two high school units and satisfactory score on placement test.

FRE 152 Intermediate French II W (3–1) 3

Continuation of FRE 151, a study of basic grammar and vocabulary with emphasis on mastery of idiomatic forms and grammatical structure in dialogues and short stories. P.R. FRE 151 or consent.

FRE 153 Intermediate French III S (3–1) 3

Continuation of FRE 152, a study of basic grammar and vocabulary with emphasis on mastery of idiomatic forms and grammatical structure in dialogues and short stories. P.R. FRE 152 or consent.

FRE 201 Advanced French I W (5–1) 5

Advanced composition, oral work and reading of selections from French literature, with greater emphasis upon the latter. P.R. FRE 153.

FRE 202 Advanced French II S (5–1) 5

Continuation of FRE 201, a study of advanced composition, oral work and reading of selections from French literature. P.R. FRE 201 or consent.

MUSIC

NOTE: (1) A maximum of six quarter hours of applied vocal and/or instrumental may be counted toward an A.A. degree.

(2) A maximum of six quarter hours of choral and/or instrumental ensemble may be counted toward an A.A. degree.

MUS 101 Introduction to Music I F (3–0) 3

An introductory study of the elements of musical understanding, with emphasis upon melody, rhythm, harmony, texture, form and timbre. For non-music majors.

MUS 102 Introduction to Music II W (3–0) 3

An introduction to the periods of music literature. For non-music majors.

MUS 103 Introduction to Music III S (3–0) 3

Further development of performance and listening. For non-music majors.

MUS 110 Music Appreciation I F (3–0) 3

A basic listening course designed to develop understanding and appreciation of the art of music. For non-music majors.

MUS 111 Music Appreciation II W (3–0) 3

A continuation of MUS 110, a basic listening course designed to develop an understanding and appreciation of the art of music. For non-music majors.

MUS 112 Music Appreciation III S (3–0) 3

A continuation of MUS 111, a basic listening course designed to develop understanding and appreciation of the art of music. For non-music majors.

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*Students with two high school units in French may by-pass these courses.

MUS 120 Basic Music Literature I F Odd (3–0) 3
A study of outstanding examples of music literature of selected periods, styles and forms.

MUS 121 Basic Music Literature II W Odd (3–0) 3
A continuation of MUS 120, which includes a study of outstanding music literature of selected periods, styles and forms.

MUS 122 Basic Music Literature III S Odd (3–0) 3
A continuation of MUS 121, which includes a study of outstanding music literature of selected periods, styles and forms.

MUS 130 *Applied Voice F,W,S,SS (1–0) 1
Individual instruction in vocal techniques and study of vocal literature. (Credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) P.R. consent.

MUS 135 Class Voice F,W (0–2) 1
Group instruction in the principles of voice production and expressive singing together with a survey of solo song literature. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) For non-music majors.

MUS 140 *Applied Piano F,W,S,SS (1–0) 1
Individual instruction in piano performance with a survey of piano literature. (Credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) P.R. consent.

MUS 145 Class Piano F,W (0–2) 1
Group instruction in the principles and techniques of piano playing for beginning students. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) For non-music majors.

MUS 150 Mixed Chorus F,W,S (0–3) 1
Open to all students. (Credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) Choral Ensemble.

MUS 151 Men's Glee Club F,W,S (0–2) 2/3
Open to all men. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) Choral Ensemble.

MUS 152 Women's Glee Club F,W,S (0–2) 2/3
Open to all women. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) Choral Ensemble.

MUS 153 Choir F,W,S (0–3) 1
Participants selected by audition. (Credit cumulative, not to exceed six quarter hours. Does not satisfy humanities requirement.) Choral Ensemble.

MUS 154 Madrigal F,W,S (0–2) 2/3
Participants selected by audition. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) Choral Ensemble.

MUS 161 String Ensemble F,W,S (0–2) 2/3
An organization designed to provide the opportunity for string players to continue the study of their instruments and to become familiar, through performance, with chamber music literature of various composers, periods and styles. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) P.R. consent.

MUS 171 Wind Ensemble F,W,S (0–2) 2/3
An organization designed to provide the opportunity for wind instrument players to continue the study of their particular instruments and to become familiar through ensemble performance with music of various composers, periods and

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*Self-supporting course

styles. (Credit cumulative, not to exceed three quarter hours. Does not satisfy humanities requirement.) P.R. consent.

MUS 201 History of Music I S, Even (5–0) 5
A survey of Western Art Music from the close of the ancient period through recent developments. P.R. A reading knowledge of music.

MUS 202 History of Music II SS, Even (5–0) 5
A continuation of MUS 201 in a survey of Western Art Music. P.R. MUS 201.

MUS 210 Music Theory I F (5–0) 5
A study of the elements of music theory and harmony. P.R. A reading knowledge of music.

MUS 211 Music Theory II W (5–0) 5
A continuation of MUS 210 in a study of the elements of music theory and harmony. P.R. MUS 210.

SPANISH

SPA 101 *Elementary Spanish I F,W (3–1) 3
Basic elements of Spanish in composition, reading and conversation designed for beginning students. (Does not satisfy humanities requirement.)

SPA 102 *Elementary Spanish II W,S (3–1) 3
Continuation of SPA 101 in a study of basic elements of Spanish in composition, reading and conversation designed for beginning students. P.R. SPA 101 or consent. (Does not satisfy humanities requirement.)

SPA 103 *Elementary Spanish III S,SS (3–1) 3
Continuation of SPA 102 in a study of basic elements of Spanish in composition, reading and conversation designated for beginning students. P.R. SPA 102 or consent. (Does not satisfy humanities requirement).

SPA 151 Intermediate Spanish I F (3–1) 3
Study and practice of reading, composition and conversation in Spanish for students with two high school units of Spanish or equivalent. P.R. SPA 103 or two high school units.

SPA 152 Intermediate Spanish II W (3–1) 3
Continuation of SPA 151, study and practice of reading, composition and conversation in Spanish. Emphasis on Spain and its civilization. P.R. SPA 151 or consent.

SPA 153 Intermediate Spanish III S (3–1) 3
Continuation of SPA 152, study and practice of reading, composition and conversation in Spanish. Emphasis on Spain and its civilization. P.R. SPA 152 or consent.

SPA 201 Advanced Spanish I W (5–1) 5
Advanced composition, oral work and reading of selections from Spanish literature, with greater emphasis upon the literature of Latin America and its people. P.R. SPA 153 or consent.

SPA 202 Advanced Spanish II S (5–0) 5
Continuation of SPA 201, advanced composition, oral work and reading of selections from Spanish literature with greater emphasis upon the literature of Latin America and its people. P.R. SPA 201 or consent.

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*Students with two high school units in Spanish may by-pass these courses.

HEALTH EDUCATION AND RECREATION DEPARTMENT

Objectives — The health education and recreation curriculum is designed to provide instruction which will lead to healthful living, and to provide experience in physical activities which will lead to acquisition of skill and fitness with leisure-time or recreational value. *Note: A maximum of six quarter hours of Health Education and Recreation instruction may be counted toward a degree.*

HED 101 Health Education I F,W (1–0) 1

A study of some basic principles of health including personal and community hygiene. Topics presented include: physical fitness, community health safeguards, alcohol, drugs, tobacco, etc.

HED 102 Health Education II W,S (1–0) 1

Continuation of HED 101.

HED 103 Health Education III S,SS (1–0) 1

Continuation of HED 102.

REC 101 Archery and Badminton F,W,S,SS (0–3) 1

Five weeks will be spent on each sport. Fundamentals of skill in using the bow and arrow and point-of-aim methods used in archery. Elementary skills for forehand, backhand and serve in badminton. Includes the developing of one's skills in these sports through individual instruction and participation. (Credit cumulative not to exceed three quarter hours.)

REC 105 *Bowling, Beginning and Advanced F,W,S,SS (0–3) 1

Instruction in skills, rules, and strategy through films, with an opportunity of participation at the bowling lanes. (Credit cumulative not to exceed three quarter hours.)

REC 110 Modern Dance F,W,S,SS (0–3) 1

A course designed to develop and improve fundamental skills in dance movements and techniques, and to encourage appreciation of dance as an art form and medium of education. (Credit cumulative not to exceed three quarter hours.)

REC 111 Social Dancing F,W,S,SS (0–3) 1

A course in the development and successful performance of dance skills with an accent on social and recreational values. Social dances covered will be Fox Trot, Rhumba, Cha Cha, and Tango. (Credit cumulative not to exceed three quarter hours.)

REC 114 Folk and Square Dancing F,W,S,SS (0–3) 1

A course in the development and successful performance of dance skills in regional American folk dances. (Credit cumulative not to exceed three quarter hours.)

REC 117 Golf, Beginning and Advanced F,S,SS (0–3) 1

Introduction to the fundamentals of the golf swing, game rules, and etiquette; procedures for playing; experience in playing at local country club. (Credit cumulative not to exceed three quarter hours.)

REC 120 Handball F,W,S,SS (0–3) 1

Fundamental skills, rules and strategy with an opportunity for participation. (Credit cumulative not to exceed three quarter hours.)

REC 122 Volleyball and Weight Lifting F,W,S,SS (0–3) 1

Fundamental rules, skills and strategy. Introduces a systematic program of body conditioning through the use of weights. (Credit cumulative not to exceed three quarter hours.)

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*Self-supporting course

REC 125 *Horseback Riding, Beginning and Advanced F,W,S,SS (0–3) 1
A course in the fundamental skills and etiquette of riding. Instruction will include walking, trotting, cantering and jumping. (Credit cumulative not to exceed three quarter hours.)

REC 130 Self Defense and Physical Conditioning F,W,S,SS (0–3) 1
An introduction to the art of self defense which includes techniques used in Judo, Ju Jitsu and Karate. Exercises designed to improve coordination and physical conditioning. (Credit cumulative not to exceed three quarter hours.)

REC 135 Scuba Diving F,W,S,SS (0–3) 1
An introduction to the sport of scuba diving. Includes care of equipment, safety instruction and practice in underwater activity. P.R. Demonstrated swimming proficiency and consent. (Credit cumulative not to exceed one quarter hour.)

REC 136 Water Skiing SS (0–3) 1
An introduction to the sport of water skiing. Includes care of equipment, safety and instruction and development of fundamental skills. P.R. Demonstrated swimming proficiency and consent. (Credit cumulative not to exceed one quarter hour.)

REC 140 Swimming F,W,S,SS (0–3) 1
Basic strokes and water safety based upon American Red Cross programs of instruction. P.R. Consent. (Credit cumulative not to exceed three quarter hours.)

REC 145 Tennis, Beginning and Advanced F,W,S,SS (0–3) 1
Elementary skills for ground strokes. Introduction of the serve, volley, smash and lob; rules and elementary strategy for singles and doubles. (Credit cumulative not to exceed three quarter hours.)

REC 150 Individualized Activity
Specialized activities approved by the Health Education and Recreation Department for a particular student. P.R. Consent.

LANGUAGE ARTS DEPARTMENT

Objectives — The Language Arts Department — embracing English and speech — strives to help the student develop proficiency in reading, writing, and speaking his native language. Emphasis is placed on skills in the freshman courses; in later courses, on humanities — understanding the broad cultural heritage of British and American national literature.

Students who intend to major in English can complete the usual requirements of the freshman and sophomore years in this department. For students who intend to major in another discipline, the courses offered will satisfy the general requirements in English and speech for a bachelor's degree.

ENGLISH

ENG 030 †Reading Improvement F,W,S,SS (5–0) 0
This course is designed to afford immediate improvement of reading skills and study habits to enable students to carry out the academic requirements of college.

ENG 031 †Fundamentals of Composition F,W,S,SS (5–0) 0
Review of grammar, punctuation and mechanics to achieve correct writing; frequent practice in the composition of paragraphs and short themes.

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*Self-supporting course.
†This is a non-credit course, but it should be counted as a five-hour load for scheduling purposes.

ENG 101 English Composition I F,W,S,SS (3–0) 3

Study of expository writing with analysis of methods of development; frequent theme assignments to reinforce correct writing and to develop an organized sequence of thought, using appropriate rhetorical methods.

ENG 102 English Composition II F,W,S,SS (3–0) 3

Continuing study of composition, emphasizing the techniques of analysis and synthesis in writing, with short stories and novels providing substance. P.R. ENG 101, or consent.

ENG 103 English Composition III F,W,S,SS (3–0) 3

Intensive study of composition, emphasizing the critical reading of verse and drama and leading into the basic techniques in researching a topic and writing a documented paper. P.R. ENG 102, or consent.

ENG 151 Journalism I F,W,S (1–3) 2

Study of the basic journalistic principles of reporting, writing and editing. Practice in writing news stories, feature stories, sports stories and editorials is provided through publishing the school newspaper and weekly bulletin. Elective credit only. P.R. Instructor's consent. (Credit cumulative not to exceed six quarter hours.)

ENG 201 Major British Writers I F,W,S (5–0) 5

Masterpieces of British literature before 1800, with emphasis on Chaucer, Shakespeare, and Milton. P.R. ENG 103, or consent.

ENG 202 Major British Writers II F,S,SS (5–0) 5

Masterpieces of British literature since 1800, with emphasis on Romantic and Victorian poets. P.R. ENG 103, or consent.

ENG 205 Major American Writers I W,S (5–0) 5

Selected complete works of major American authors before 1900: Poe, Hawthorne, Melville, Emerson, Thoreau, Whitman, Dickinson, Twain. P.R. ENG 103, or consent.

ENG 206 Major American Writers II S,SS (5–0) 5

Selected complete works of major Twentieth Century authors, with emphasis on their interpretation of the modern era. P.R. ENG 103, or consent.

SPEECH

SPH 101 Oral Communication F,W,S,SS (3–0) 3

Principles of effective communication, with emphasis on listening and understanding in conversations, interviews, and conferences.

SPH 151 Play Production F,W,S (1–3) 2

Study of basic principles and technical problems of acting, stage craft and play production. The laboratory consists of the production and presentation of plays for the student body and interschool exchange. Elective credit only. P.R. Instructor's consent. (Credit cumulative not to exceed six quarter hours.)

SPH 201 Public Speaking F,W,S,SS (3–0) 3

Study of the mechanics of speaking before an audience; adaptation of method of purpose; practice in different types of speeches, such as extemporaneous, impromptu, prepared, and memorized. P.R. SPH 101, or consent.

MATHEMATICS DEPARTMENT

Objectives — The mathematics department is designed to prepare students for professional careers in mathematics and related areas; to develop student knowledges and understandings of the fundamental principles and concepts of mathematics; to develop manipulative skills, and the ability to apply mathematics to physical situations.

EDP 110 Computer Fundamentals F,W,S (3–0) 3
A study of fundamental concepts in programming principles for digital computers and the use of a computer in problem solution. The course is designed for non-data processing majors. P.R. MAT 101 or consent.

MAT 031 *Developmental Algebra F,W,S,SS (5–0) 0
An intensive study of pre-college algebra designed for the purposes of providing a background in algebra and preparing the student for college-level mathematics. P.R. Placement examination.

MAT 033 *Developmental Geometry F,W,S,SS (5–0) 0
An intensive study of pre-college geometry for the purpose of preparing the student for college-level mathematics. High school geometry or MAT 033 is required as a corequisite for MAT 101 and MAT 110 and should be taken by candidates for the A.A. degree who have a geometry deficiency.

MAT 101 Introduction to Mathematics I F,W,S,SS (5–0) 5
A first course in mathematics designed to give the essential mathematical background for college work in major fields other than mathematics, engineering or physical science. The course includes elementary set theory and logic; structure of the number system — integers, rational, irrational, and complex numbers; reinforces the manipulative skills learned in elementary algebra. (Not applicable to mathematics or science majors.) P.R. Placement examination or MAT 031; C.R. MAT 033 or high school geometry.

MAT 102 Introduction to Mathematics II F,W,S,SS (5–0) 5
A continuation of MAT 101 designed to give fundamental algebraic concepts deemed useful to individuals in a technological society. Course includes elementary work with "groups" and "fields"; solution, analysis and graphing of first and higher degree equations by graphic and algebraic methods, including matrices and determinants. (Not applicable to mathematics or science majors.) P.R. MAT 101.

MAT 110 College Algebra F,W,S,SS (5–0) 5
The course includes the study of sets and logic, the meaning of the number system, polynomials, algebraic fractions, equations, vectors and matrices. Required for mathematics, science, and engineering majors. P.R. Placement examination; C.R. MAT 033 or equivalent.

MAT 120 Trigonometry F,W,S,SS (5–0) 5
This course is a continuation of MAT 110. Topics include the study of inequalities, functions and relations, exponential and logarithmic functions, trigonometric functions of angles, trigonometric functions of real numbers, hyperbolic functions and a brief introduction to analytic geometry. P.R. MAT 102 or MAT 110.

MAT 140 Introductory Calculus S,SS (5–0) 5
This is a brief treatment of the calculus for non-mathematical or non-science majors. Topics include the real numbers, functions, limits, derivatives and definite integrals, with applications to business and social science. P.R. MAT 102 or equivalent.

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*This is a non-credit course, but it should be counted as a five-hour load for scheduling purposes.

MAT 150 Analytic Geometry and Calculus I F,S,SS (5–1) 5
A unified sequence in analytic geometry and differential and integral calculus. (This sequence is recommended for students in engineering, mathematics and the physical sciences.) P.R. MAT 120 or the equivalent and consent.

MAT 201 Analytic Geometry and Calculus II F,W (5–1) 5
A continuation of MAT 150. Topics include definite integrals; applications to areas, volumes, arc lengths and work; exponential, hyperbolic and trigonometric functions; integration methods. P.R. MAT 150 or consent.

MAT 202 Analytic Geometry and Calculus III W,S (5–1) 5
A continuation of MAT 201. Topics include conics, moments, centers of gravity, indeterminate forms, improper integrals, series, two-dimensional vector algebra, polar coordinates. P.R. MAT 201 or consent.

MAT 203 Analytic Geometry and Calculus IV S,SS (5–1) 5
A continuation of MAT 202. Topics include three-dimensional vector algebra, multiple integrals, line integrals, surface integrals, Green's Theorem, change of variables. P.R. MAT 202 or consent.

PHYSICAL SCIENCE DEPARTMENT

Objectives — The physical science courses are designed to prepare students for professional careers in science and related areas, to teach the students to apply the scientific method, to think logically and systematically, to have an open-minded attitude in interpreting data, to be thorough in considering all aspects of a problem; to prepare people to live in a complex society; to impart knowledge of scientific facts; and to promote an understanding of the contributions that physical science has made and is making to the ability of man to master his environment.

CHEMISTRY

CHM 101 General Chemistry I F,W,S,SS (4–3) 5
A study of the fundamental postulates and laws of chemistry with emphasis upon the relationship of atomic structure to physical and chemical properties of the elements. C.R. MAT 101 or MAT 110, or consent.

CHM 102 General Chemistry II W,S (4–3) 5
A study of general chemistry with emphasis upon chemical equilibria, chemical kinetics, solution stoichiometry and electrochemistry. P.R. CHM 101 or consent.

CHM 103 General Chemistry III and Elementary Analysis S (3–4) 5
General chemistry including qualitative analysis with emphasis upon ionic equilibria and relating chemical properties to atomic and molecular structure. Some quantitative analysis with and without instruments will be included. P.R. CHM 102 or consent.

CHM 201 Quantitative Chemical Analysis F,S (3–6) 6
The theory of quantitative volumetric and gravimetric determinations, with emphasis upon the principles of precipitation, neutralization and oxidation and reduction applied to unknowns. Some instrumental methods are included. P.R. CHM 103 or consent.

CHM 210 Organic Chemistry I F,S (4–4) 6
A systematic study of the basic theories, principles and techniques of organic chemistry and their application to reactions of aliphatic and aromatic compounds and natural products. Laboratory work in purification, characterization and synthesis of organic compounds. P.R. CHM 103 or consent.

CHM 211 Organic Chemistry II W,SS (4–4) 6
Continuation of CHM 210 with a greater emphasis on instrumental analysis in laboratory. P.R. CHM 210 or consent.

GEOLOGY

GEL 101 Physical Geology F,SS Even (4–3) 5

An introductory course in geology, including the development of the earth, the origin of landforms, and the study of common rocks and minerals.

GEL 201 Historical Geology W,SS Odd (4–3) 5

A study of the sequence of the geological periods, including the fossils and rock strata associated with the various periods. P.R. GEL 101 or consent.

PHYSICS

PHY 101 Introduction to Physics I F (3–2) 4

The first of a three quarter sequence designed primarily for students not majoring in engineering, mathematics or physical science. A study of the structure and states of matter and basic mechanical systems, with emphasis on the application of basic mathematics to theory. C.R. MAT 101 or consent.

PHY 102 Introduction to Physics II W (3–2) 4

A continuation of PHY 101 plus topics in the thermal properties of matter, behavior of fluids, and wave motion. P.R. PHY 101 or consent.

PHY 103 Introduction to Physics III S (3–2) 4

A study of the structure of the atom, static and current electricity, and selected topics from atomic and nuclear physics. P.R. PHY 102 or consent.

PHY 201 General Physics I: Mechanics F (4–3) 5

The first of a three quarter sequence designed primarily for students majoring in physical science, engineering or mathematics. Includes topics in kinematics and dynamic and static mechanical systems approached at a level requiring the use of calculus and vector analysis. P.R. MAT 150 or consent.

PHY 202 General Physics II: Heat, Sound and Light W (4–3) 5

A continuation of PHY 201. Areas of study include topics in molecular physics, wave mechanics, sound and geometric optics. P.R. PHY 201 or consent.

PHY 203 General Physics III: Electricity and Magnetism S (4–3) 5

A continuation of PHY 202. Topics studied include electric fields, current electricity, electromagnetic fields and AC theory. P.R. PHY 202 or consent.

PHYSICAL SCIENCE, BASIC

SCI 101 *Basic Physical Science I F,W,S,SS (3–2) 4

An integrated study of selected topics presented in logical order from physics, chemistry, geology, meteorology and astronomy with basic concepts emphasized. C.R. MAT 031.

SCI 102 *Basic Physical Science II F,W,S (3–2) 4

Continuation of SCI 101. P.R. SCI 101.

SCI 103 *Basic Physical Science III S,SS (3–2) 4

Continuation of SCI 102. P.R. SCI 102.

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*These courses should fulfill the physical-science requirement for liberal arts or education majors at many four-year institutions; however, these courses are not a substitute for chemistry or physics when they are stated as specific requirements.

SOCIAL SCIENCE DEPARTMENT

Objectives — The social science courses are designed to develop on the part of the student the power of independent investigation and critical analysis; to develop a clearer understanding of the forces behind the movements and problems of mankind so that the student can more effectively care for himself and discharge the duties of a citizen; to develop competence in analyzing individual and group behaviors and their effects upon interpersonal relationships; to develop an understanding of man's development politically, socially, economically and culturally.

ANTHROPOLOGY

ANT 101 General Anthropology S (5–0) 5

An introductory course including human classification according to physical anthropology, the nature and development of culture and patterns of human behavior in simpler societies.

EDUCATION

EDU 201 Introduction to Education SS (5–0) 5

A first course in education surveying the history, development and present status of education in American society, with attention given to the objectives of democratic education and the role of the teacher in their implementation.

GEOGRAPHY

GEO 101 Introduction to Physical Geography F (4–2) 5

A study of the basic physical elements of geography, emphasizing the climatic environment.

GEO 201 Economic Geography W (5–0) 5

The description of world regions and the relationship of the geographic environment to economic pursuits in agriculture, industry and commerce.

HISTORY

HIS 101 World Civilization I F,W,S,SS (5–0) 5

A survey of the history of man — his political, social, religious, intellectual and artistic activities — from the earliest times to the seventeenth century in Europe, Asia and Africa.

HIS 102 World Civilization II F,W,S,SS (5–0) 5

The concluding part of the survey of world civilization, including the trends from the seventeenth century to the present in Europe, Asia and the Americas.

HIS 151 American History I F,W,S (3–0) 3

A survey of the important events of the American development from the Age of Foreign Adventure to 1799.

HIS 152 American History II W,S (3–0) 3

The intermediate survey of the American development from 1800 to 1899.

HIS 153 American History III S,SS (3–0) 3

The conclusion of the survey of the American development from 1900 to the present.

PHILOSOPHY

PHI 101 Introduction to Philosophy W,S (5–0) 5

An introduction to the basic problems of human thought emphasizing the philosophical systems dealing with these problems and their historical development.

PHI 201 Logic F (5–0) 5

An intensive study of the methodology of valid reasoning, including formal principles of deduction and induction.

POLITICAL SCIENCE

POL 101 American Government I: National F,W,S (5—0) 5

The constitution and legal bases of the national government in relation to its organization, powers, procedures and programs. Attention is given to the instrumentalities of popular control.

POL 102 American Government II: State and Local S (5—0) 5

The relationship of state government to the national government; state constitutions; the organization, powers, procedures and programs of the state government; the relationship of state and local governments; popular control in state and local governments. P.R. POL 101, HIS 151 or consent.

PSYCHOLOGY

PSY 201 General Psychology F,W,S (5—0) 5

A survey of psychology, including organic structure, perception, motivation, learning, principles of behavior, measurements and theories of psychology.

PSY 202 Human Development W,S (5—0) 5

Development of the normal child and adolescent, with consideration of the social, biological and cultural influences upon growth. P.R. PSY 201.

PSY 203 Educational Psychology W,S (5—0) 5

A study of the nature of the learning process with attention to inherited tendencies, habit and attitude formation, acquisition of skills, sense perception and retention. It includes a consideration of the elements of learning theory such as conditioning, association and insight.

SOCIOLOGY

SOC 201 Introduction to Sociology F,W,S,SS (5—0) 5

An analysis of the society and culture dealing with social organization, control, institutions, stratification and social change.

SOC 202 Social Problems F,W,S (5—0) 5

A study of the major social problems of modern society, including family disorganization, minority groups and problems associated with industrial and urban development.

SOC 203 Marriage and the Family F,W,S (5—0) 5

Study of the American family with attention given to courtship, marriage, family relationships and interdependencies and social or cultural stresses emerging from contemporary family life. P.R. SOC 201 or consent.

PART SIX

THE TRADE AND VOCATIONAL PROGRAM

Descriptions Of

Trade and Vocational Courses

And Curricula

Leading To A

VOCATIONAL DIPLOMA

The following section of the Catalog contains descriptions of the curricula listed below:

Air Conditioning and Refrigeration

Automotive Body Repair

Automotive Mechanics

Dental Assisting

Electrical Installation

Machinist

Medical Office Assisting

Practical Nursing

Welding

AIR CONDITIONING AND REFRIGERATION

The growing use of air-conditioning (heating and cooling) and refrigeration equipment systems throughout the nation provides many job opportunities for the skilled mechanics who install and repair such equipment in office buildings, factories, homes, food stores, restaurants, theaters, churches and other establishments.

A great number of these skilled people are employed by business concerns which specialize in the repair and maintenance of commercial, industrial and home air-conditioning (heating and cooling) and refrigeration equipment.

Employers prefer to hire men who have a background of knowledge and skill in the field and give them the opportunity to gain additional experience on the job while earning good wages.

Thousands of men trained to install, maintain and repair air-conditioning and refrigeration equipment are needed to meet the demand in this field.

DESCRIPTION OF CURRICULUM

The air-conditioning and refrigeration curriculum at Central Piedmont Community College is designed to prepare a person for employment in this field. The students not only learn theory but also spend a large amount of time in a modern laboratory with up-to-date equipment. Necessary courses in mathematics, science and other related areas are included in the program. A graduate from this curriculum is awarded a diploma by the College and a diploma from the American Refrigeration Institute.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR AIR CONDITIONING AND REFRIGERATION

Course Title		Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
AHR 1102	Refrigeration Principles and Service	3	12	7
DFT 1104	Blueprint Reading	3	0	3
PHY 1101	Shop Science I	2	2	3
MAT 1101	Shop Mathematics I	3	0	3
ENG 1102	Communication Skills	3	2	3
		14	16	19
SECOND QUARTER				
AHR 1107	Commercial Refrigeration and Cooling Systems	3	12	7
DFT 1116	Applied Drafting	3	0	3
PHY 1102	Shop Science II	2	2	3
MAT 1102	Shop Mathematics II	3	0	3
AHR 1113	Heat Loads and Losses	4	0	4
		15	14	20
THIRD QUARTER				
AHR 1111	Automatic Controls	2	3	3
AHR 1118	Duct Design and Installation	3	9	6
MAT 1103	Shop Mathematics III	3	0	3
AHR 1116	Oil Burner Installation and Service	2	3	3
WLD 1101	Basic Gas Welding	0	3	1
		10	18	16
FOURTH QUARTER				
AHR 1117	Gas, Electric and Liquid Heat	3	12	7
AHR 1114	All-Weather Systems	2	3	3
PSY 1101	Human Relations	2	0	2
AHR 1115	Estimating	4	0	4
BUS 1103	Shop Management	2	0	2
		13	15	18

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

AHR 1102 Refrigeration Principles and Service (3—12) 7

This course consists of lectures, discussions and demonstrations. Many fields are covered, including essential terminology, laws of refrigeration, physical and chemical effects, materials and tools. The compression system, compressor construction, refrigerants, controls, absorption systems and hermetic units are major topics in the course. Practice will be given in the use of tools in basic refrigeration jobs such as tube bending, flaring, soldering, refrigerant weighing and other service jobs. Much time is spent in actual refrigeration service practice. Discussions, demonstrations and practice will take place on residential cabinets using conventional, hermetic and absorption systems. Controls, system maintenance and system replacement will be stressed. Typical service problems will be worked out by each student. Complete rebuilding of domestic refrigerators will be undertaken.

AHR 1107 Commercial Refrigeration and Cooling Systems (3—12) 7

This course consists of study, demonstration and practice in the installation and service of commercial refrigeration systems. The various commercial applications of refrigeration are covered in classroom discussion before actual practice is given. The units covered include commercial cabinets, reach-in cabinets, walk-in coolers, display cases, frozen food cabinets, ice cream cabinets, water coolers, ice makers and other industrial applications. All standard types of compressors, condensers, coils, valves and controls are studied. Various systems are installed, and typical service problems worked out. Cooling-system installation and service practice on the various types of air-cooled and water-cooled conditioning systems are taught. Types of units used include self-contained and remote air-cooled residential and small commercial units, water-cooled units, water towers, chilled-water systems, heat pumps and automotive systems. Service of air-movement systems and installation and service of standard controls are stressed. Service and storage of window units are included. P.R. AHR 1102, PHY 1101; C.R. MAT 1103, DFT 1104.

AHR 1111 Automatic Controls (2—3) 3

This course is designed to prepare the student for the study of heating and cooling controls. The fundamentals of controls, definitions, fundamentals of measurement, electric controls, pneumatic controls and controls for air conditioning are covered in theory so they may be applied in the laboratory section. Practical applications will be given in zone controls, unit heater and ventilator controls, commercial fan system controls, commercial refrigeration controls and radiant panel controls. P.R. AHR 1107, MAT 1103, DFT 1116.

AHR 1113 Heat Loads and Losses (4—0) 4

In this course the history, theory and factors affecting air conditioning are studied and discussed. The course will cover history of air conditioning, terminology, temperature, measurement, air movement, humidity, psychometric properties, comfort zone, effective temperature, ducts, air diffusion, air cleaning, ozone and testing instruments. Many topics are studied including heat loads, heat leakage, coil and condensing unit capacities, coil types and design, coil usage, coil capacities, cooling loads, latent heat, specific heat, motor sizing, tubing sizing and heat loss and gains through various structures. Attention is given to the heating and cooling needs of various structures and the selection of equipment to meet these needs. Load distribution, both air and liquid, is studied, and systems are designed to accomplish proper distribution. This course is very closely correlated with the drafting course. P.R. MAT 1101, AHR 1102, DFT 1104, PHY 1101; C.R. MAT 1103, PHY 1102, AHR 1107.

AHR 1114 All-Weather Systems (2–3) 3

The student receives practical information and experience in the combination of heating and cooling equipment into integrated systems. The special controls and their sequence of operation are studied in detail. Heat pumps, cycles, absorption cycles and conventional equipment combinations are studied. P.R. AHR 1116, AHR 1118, MAT 1103, PHY 1102; C.R. AHR 1117.

AHR 1115 Estimating (4–0) 4

Time and material take-offs of duct work and distribution systems, actual cost analysis and profit percentage markups are stressed. Equipment costs and markups for refrigeration and all-weather systems are studied for new installations, replacements and repairs to systems. Operational cost estimates are also a part of the course covered. P.R. AHR 1117, MAT 1104; C.R. AHR 1111, AHR 1116, AHR 1118.

AHR 1116 Oil Burner Installation and Service (2–3) 3

This course involves study and practice in the installation and servicing of equipment using high pressure, low pressure, rotary and vaporizing burners. The installation and servicing of various oil burning equipment controls are studied. Actual practice is given in "troubleshooting" problems of oil burners, fans, pumps and their controls under typical working conditions. Service department stock, tools and procedures are integral parts of the instruction. P.R. AHR 1107; C.R. MAT 1103, PHY 1102.

AHR 1117 Gas, Electric and Liquid Heat (3–12) 7

The student studies and receives practice in servicing and installing gas burners, electric heating elements and their controls. The applications of various heating devices in liquid heating and their controls are studied. While not a course in steamfitting, the course treats principles of installation of hot water and low pressure steam systems with their controls, pumps and coils. P.R. MAT 1103, PHY 1102, AHR 1111.

AHR 1118 Duct Design and Installation (3–9) 6

The student is introduced to the sheet metal shop and its rules and regulations concerning safety and workmanship. He learns to recognize and use safely the various hand tools and machines of the trade. Hand, machine and fastening operations are correlated with flat layout and parallel line development in the formation of pipe intersection, straight duct, elbows, offsets and reducers as used in the air conditioning trade. The student is given practice in fabrication of duct systems closely correlated with the layout as designed in the drafting section. Instruction and practice are given in radial and triangulation development as used in the fabrication of duct systems and fittings necessary to conditioning systems. Working conditioning systems will be designed by each student. C.R. DFT 1116, MAT 1103, PHY 1102.

BUS 1103 Shop Management (2–0) 2

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations.

DFT 1104 Blueprint Reading (3–0) 3

The interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes.

DFT 1116 Applied Drafting (3–0) 3

A study of the prints of the air conditioning trade such as machine prints, exploded prints, wiring schematics, floor plans, elevations and conditioning and equipment layouts constitutes a major portion of this course. Practice in shop sketching, isometric sketching and equipment layouts on prints or tracings is part of the course. Special attention is given to shop sketches of equipment placement and heating distribution systems. It is expected that each student will become familiar with the prints of the trade, will become adept at reading them, and will be able to produce the necessary shop sketches. P.R. DFT 1104.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

MAT 1101 Shop Mathematics I (3–0) 3

A review and application of operations with decimals and fractions, percentages, ratios and proportions. An introduction to algebra with emphasis on formulas.

MAT 1102 Shop Mathematics II (3–0) 3

The emphasis is placed on definitions and theorems in geometry. About 40 general theorems are demonstrated by the instructor. Specific application of each theorem to the solution of geometric shop problems is demonstrated. Concepts of linear measure areas and volumes are taught. Geometric formulas are derived intuitively. P.R. MAT 1101.

MAT 1103 Shop Mathematics III (3–0) 3

The theory of right triangle trigonometry. Topics include definitions of the six trigonometric ratios, use of trigonometric tables and procedures for visualizing parts of the right triangle on mechanical drawings. Applications of interest to the machinist and air conditioning and refrigeration student. Logarithms are taught as a computational aid only. P.R. MAT 1102.

PHY 1101 Shop Science I (2–2) 3

An introductory course in physics and its applications, covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific applications of electrical energy also constitute major areas of study.

PHY 1102 Shop Science II (2–2) 3

Principles of force, motion, work, energy, power and mechanisms' mechanical advantages are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 1101.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations with special emphasis on the operating responsibilities of good management.

WLD 1101 Basic Gas Welding (0–3) 1

Welding demonstration by the instructor and practice by students in the oxyacetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work.

AUTOMOTIVE BODY REPAIR

The field of automotive body repair and painting requires a large number of well-trained people to meet the growing demand for the many skills needed in this area of employment. People with a background of knowledge and skill in this field have excellent opportunities for jobs with good salaries. Many of these craftsmen, after gaining additional experience, go on to open their own businesses or become body shop foremen, supervisors or managers.

DESCRIPTION OF CURRICULUM

The curriculum at Central Piedmont Community College devotes much of the student's time in the shop to learning of the necessary skills and practicing of these skills on car bodies and components. Every attempt is made to make these practical experiences as similar to the actual on-the-job work as possible. The large shop and excellent equipment are ideal for preparation for entry into an occupation offering many job opportunities. A graduate from this curriculum will receive a diploma from the College.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR AUTOMOTIVE BODY REPAIR

Course Title	Hours per Week		Quarter Hours
	Class	Lab.	Credit
FIRST QUARTER			
AUT 1111 Auto Body Repair I	3	12	7
MAT 1101 Shop Mathematics I	3	0	3
WLD 1101 Basic Gas Welding	0	3	1
ENG 1102 Communication Skills	3	2	3
	9	17	14
SECOND QUARTER			
AUT 1112 Auto Body Repair II	5	15	10
WLD 1105 Auto Body Welding	0	3	1
PHY 1101 Shop Science I	2	2	3
	7	20	14
THIRD QUARTER			
AUT 1113 Metal Finishing and Painting	3	12	7
AUT 1115 Trim, Glass and Radiator Repair	2	6	4
PHY 1102 Shop Science II	2	2	3
	7	20	14
FOURTH QUARTER			
AUT 1114 Body Shop Applications	1	21	8
PSY 1101 Human Relations	2	0	2
BUS 1103 Shop Management	2	0	2
	5	21	12

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

AUT 1111 Auto Body Repair I (3–12) 7

Basic principles of automobile construction, design and manufacturing are covered in the beginning of the course. A thorough study is made of angles, crown and forming of steel into the complex contour of the present-day vehicles. The practical application is to have the student apply the first principles of straightening, aligning and painting of damaged areas.

AUT 1112 Auto Body Repair II (5–15) 10

A thorough study of the requirements of a metal worker, the use of essential tools, forming fender flanges and beads, and straightening typical damage. It is here that the student begins acquiring skill, learning dexterity in shaping angles, crowns and contour of the metal of the body and fenders. More difficult types of metal working and painting are assigned. P.R. AUT 1111, WLD 1101.

AUT 1113 Metal Finishing and Painting (3–12) 7

The development of the skills of shrinking stretched metal, soldering and leading and preparing metal for the painter. Straightening of doors, hoods and deck lids and fitting and aligning are emphasized. Refinishing includes painting a fender or panel, spot repairs, and complete vehicle painting. The use and application of required power tools completes this phase. P.R. AUT 1112, WLD 1105.

AUT 1114 Body Shop Applications (1–21) 8

A general introduction to and instruction in the automotive frame and front end suspension systems. Unit job application covers the actual straightening of frame and front wheel alignment. A general shop application involves the application of all phases of training received. Repair order writing, parts purchasing, owner contacts, estimates of damage and developing the repair order for financing with final settlement with car owner. P.R. AUT 1115, PHY 1102.

AUT 1115 Trim, Glass and Radiator Repair (2–6) 4

Principles of removal and installation of all phases of interior trim are applied. Cutting, sewing and installing headlinings, seat covers and door trim panels are covered in class and in their practical application. Glass removal, cutting, fitting and installation are covered in detail. A thorough knowledge of the engine cooling system, a study of repairs made necessary by accident to the system and testing to insure normal engine cooling operation are emphasized. Advanced painting of trim parts and accessories requiring extreme care and skill is included in the course.

BUS 1103 Shop Management (2–0) 2

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

MAT 1101 Shop Mathematics I (3–0) 3

A review and application of operations with decimals and fractions, percentages, ratios and proportions. An introduction to algebra with emphasis on formulas.

PHY 1101 Shop Science I (2–2) 3

An introductory course in physics and its applications covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific applications of electrical energy also constitute major areas of study.

PHY 1102 Shop Science II (2–2) 3

Principles of force, motion, work, energy, power, and mechanisms' mechanical advantage are treated extensively. The production and transmission or heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 1101.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

WLD 1101 Basic Gas Welding (0–3) 1

Welding demonstrations by the instructor and practice by students in the oxy-acetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work.

WLD 1105 Auto Body Welding (0–3) 1

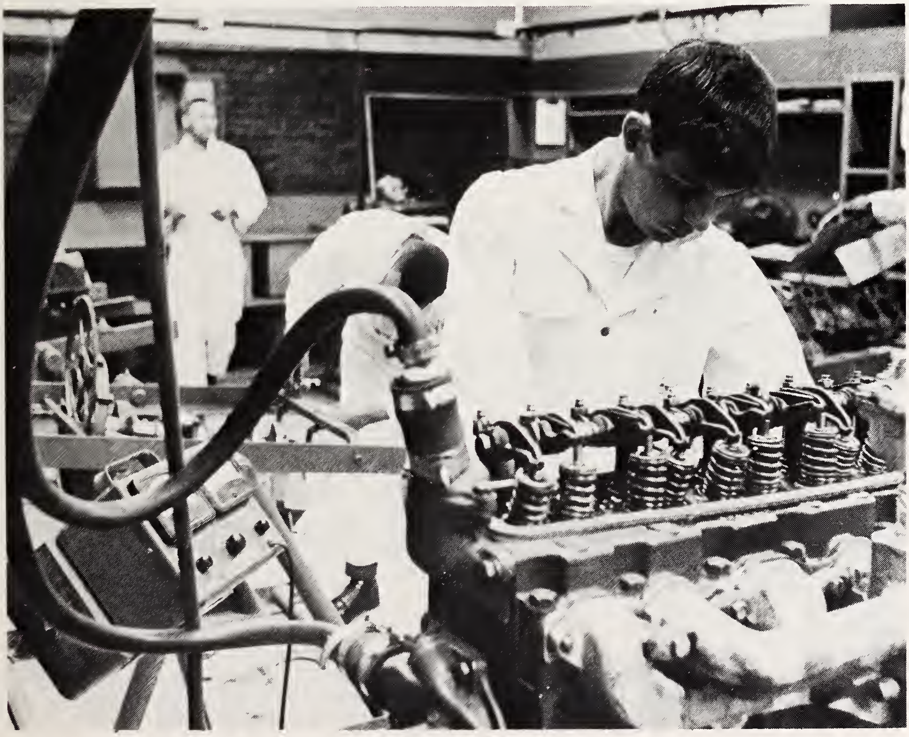
Welding practices on material applicable to the installation of body panels and repairs to doors, fenders, hoods and deck lids. The student runs beads, does butt and fillet welds and performs all tests to detect strength and weaknesses of welded joints. Safety procedures are emphasized throughout the course. P.R. WLD 1101.

AUTOMOTIVE MECHANICS

The modern automobile is a complicated machine requiring a highly-skilled, well-trained man to properly repair and maintain it for operation at peak efficiency. Automobile mechanics make up the largest service and repair group in the U. S., employing over 10,000 new men every year. Wages are good and opportunities are excellent for the man who is willing to work and anxious to learn.

DESCRIPTION OF CURRICULUM

The Automotive Mechanics curriculum at Central Piedmont Community College is designed to provide the future craftsman with a well-planned program of operational skills and theory necessary to become an automotive mechanic. Topics emphasized include working knowledge in the tune-up, overhaul, repair and replacement of parts of the automotive engine; trouble shooting and repair of electrical equipment; overhaul and replacement of parts in conventional and automatic transmissions and preparation in other vital areas. A student who completes the requirements of this curriculum will receive a diploma from the College.



SUGGESTED SEQUENCE OF REQUIRED COURSES FOR AUTOMOTIVE MECHANICS

Course Title	Hours per Week		Quarter Hours Credit
	Class	Lab.	
FIRST QUARTER			
PME 1101 Internal Combustion Engines	4	12	8
MAT 1101 Shop Mathematics I	3	0	3
ENG 1102 Communication Skills	3	2	3
PHY 1101 Shop Science I	2	2	3
	12	16	17
SECOND QUARTER			
PME 1102 Electrical Systems	3	9	6
PME 1103 Fuel Systems	3	6	5
PHY 1102 Shop Science II	2	2	3
WLD 1101 Basic Gas Welding	0	3	1
	8	20	15
THIRD QUARTER			
AUT 1123 Auto Chassis and Suspension Systems	3	9	6
AUT 1124 Auto Power Train Systems	3	12	7
	6	21	13
FOURTH QUARTER			
AUT 1121 Auto Air Conditioning	1	3	2
AUT 1125 Auto Servicing	1	18	7
PSY 1101 Human Relations	2	0	2
BUS 1103 Shop Management	2	0	2
	6	21	13

COURSE DESCRIPTIONS

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AUT 1121 Auto Air Conditioning (1–3) 2

A general introduction to the principles of refrigeration; study of the assembly of the components and connections necessary in the mechanisms; the methods of operation and control; proper handling of refrigerants in charging the system. P.R. PHY 1102.

AUT 1123 Auto Chassis and Suspension Systems (3–9) 6

The principles and functions of the components of automotive chassis. Practical job instruction is given in adjusting and repairing suspension, steering and braking systems. Units to be studied include shock absorbers, springs, steering systems, steering linkage, front end and types and servicing of brakes. P.R. PME 1102, PME 1103.

AUT 1124 Auto Power Train Systems (3–12) 7

Principles and functions of automotive power train systems; clutches, transmissions, gears, torque converters, drive shaft assemblies, rear axles and differentials. Identification of troubles, servicing and repair. P.R. PHY 1102, MAT 1101, PME 1103.

AUT 1125 Auto Servicing (1–18) 7

Emphasis is on the shop procedures necessary in determining the nature of troubles in the various component systems of the automobile. The course consists of trouble-shooting of automotive systems, providing a full range of testing, adjusting, repairing and replacing experiences. P.R. AUT 1123, AUT 1124.

BUS 1103 Shop Management (2–0) 2

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

MAT 1101 Shop Mathematics I (3–0) 3

A review and application of operations with decimals and fractions, percentages, ratios and proportions. An introduction to algebra with emphasis on formulas.

PHY 1101 Shop Science I (2–2) 3

An introductory course in physics and its application covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific applications of electrical energy also constitute major areas of study.

PHY 1102 Shop Science II (2–2) 3

Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 1101.

PME 1101 Internal Combustion Engines (4–12) 8

The development of a thorough knowledge and ability in using, maintaining and storing the various hand tools and measuring devices needed in automotive repair work. A study of the construction and operation of components of automotive engines. Testing of engine performance; servicing and maintenance of pistons, valves, cams and camshafts; fuel and exhaust systems; cooling systems; proper lubrication and methods of testing, diagnosing and repairing.

PME 1102 Electrical Systems (3–9) 6

A thorough study of the electrical system of the automobile, battery cranking mechanism, generator, ignition, accessories and wiring. Emphasis is placed on special tools and testing equipment for the electrical system. P.R. PME 1101, PHY 1101, MAT 1101.

PME 1103 Fuel Systems (3–6) 5

A thorough study of the fuel system of the automobile including fuel pumps, carburetors and fuel injectors. Characteristics of fuels, types of fuel systems, special tools and testing equipment for the fuel systems. P.R. PME 1101, MAT 1101.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

WLD 1101 Basic Gas Welding (0–3) 1

Welding demonstrations by the instructor and practice by students in the oxy-acetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work.

DENTAL ASSISTING

The primary function of the dental assistant is to serve as the chairside assistant to the dentist. Here she plays an active and integral role in dental procedures by preparing patients for treatment, setting out instruments in the order in which they are to be used, keeping the operation field clear during treatment, mixing filling materials and dental cements and passing these materials and instruments to the dentist as he needs them.

The trained dental assistant also checks equipment, sterilizes instruments and engages in such laboratory work as making study models of teeth, casting inlays, processing x-ray films and mounting them in appropriate holders.

In many offices the dental assistant also serves as receptionist and office manager, schedules appointments and keeps records.

DESCRIPTION OF CURRICULUM

The curriculum at Central Piedmont Community College includes instruction in dental anatomy and physiology, bacteriology, pharmacology, oral pathology, dental materials, chairside assisting, typing, English, human relations and record keeping. A large portion of the student's time is spent in laboratory work and clinical experiences. A graduate from this curriculum will receive a diploma from the College.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR DENTAL ASSISTING

Course Title	Hours per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER			
DEN 1000 Anatomy and Physiology	3	0	3
DEN 1001 Introduction to Dental Assisting	2	0	2
DEN 1002 Dental Materials	3	9	6
DEN 1003 Preclinical Science I	3	0	3
PSY 1101 Human Relations	2	0	2
ENG 1102 Communication Skills	3	2	3
	16	11	19
SECOND QUARTER			
DEN 1004 Preclinical Science II	3	0	3
DEN 1005 Dental Roentgenology	2	6	4
DEN 1006 Clinical Procedures I	2	6	4
BUS 1110 Accounting	5	2	6
ENG 1103 Report Writing	3	0	3
	15	14	20
THIRD QUARTER			
DEN 1007 Clinical Procedures II	4	3	5
DEN 1008 Dental Office Management	4	3	5
DEN 1009 Dental Office Practice I	0	9	3
ENG 1104 Speech	3	0	3
BUS 1102 Typing or Elective*	2	3	3
	13	18	19
FOURTH QUARTER			
DEN 1010 Dental Office Practice II	0	24	8
DEN 1011 Dental Assistant Seminar	2	0	2
	2	24	10

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*Consent of Dental Assisting Department

COURSE DESCRIPTIONS

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BUS 1102 Typing (2–3) 3

This course is required of all students who have had no previous typing. The touch system is taught. The proper manipulation of the keyboard and the operation of the machine are given special attention.

BUS 1110 Accounting (5–2) 6

The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding of the mechanics of accounting — collecting, summarizing, analyzing and reporting information about services and mercantile enterprises. Opportunity is given for practical application of the principles learned.

DEN 1000 Anatomy and Physiology (3–0) 3

A lecture course designed to develop a knowledge and understanding of the basic structures surrounding the teeth, formation of the primary and permanent dentition, basic anatomy of individual teeth and the application of these to the carving of restorative patterns. The general anatomy of the body and basic concepts of the normal functions of body systems are also discussed.

DEN 1001 Introduction to Dental Assisting (2–0) 2

An introduction to the dental profession; its purpose, history, progress and terminology; members of the dental health team and their education, training, function and respective professional organizations; laws and ethics governing the practice of dentistry; understanding and practical application of personal hygiene; professional and social conduct of the dental assistant.

DEN 1002 Dental Materials (3–9) 6

A study of the composition and source of materials employed in dentistry and the behavior of these materials under various treatments. The dental assistant student learns through lectures, demonstrations and laboratory exercises to identify and prepare these materials for any of the routine dental procedures in the general practice of dentistry and in the specialties of the dental profession.

DEN 1003 Preclinical Science I (3–0) 3

This course is designed to show how bacteriology and dental health are related, and to demonstrate techniques for successfully coping with the bacteriological problems which arise in the dental office. A portion of the course is devoted to diet and nutrition as applied to dentistry.

DEN 1004 Preclinical Science II (3–0) 3

This course covers oral pathology, pharmacology and first aid. Topics studied include fundamental concepts of the more common diseases and disease processes in the oral cavity, the indications, dosage, methods of administration and storage of common drugs and medicaments used in the dental office; first aid and emergency care for the dental patient. P.R. DEN 1000, DEN 1003.

DEN 1005 Dental Roentgenology (2–6) 4

Lectures, demonstrations and clinical practice teach the dental assistant student the techniques of exposing, processing and mounting intraoral roentgenograms. The student also learns the various types, speeds and methods of protection of films used in dentistry. Radiation hazards and safety measures, as well as the proper operation of the dental x-ray machine, are studied. P.R. DEN 1000, DEN 1002.

DEN 1006 Clinical Procedures I (2–6) 4

The identification of dental equipment and dental instruments for general dentistry and specialized areas with emphasis given to utilization and care. Proper sterilization techniques are stressed. An introduction to chairside procedures. P.R. DEN 1000, DEN 1001, DEN 1002, DEN 1003.

DEN 1007 Clinical Procedures II (4–3) 5

A continuation in chairside procedures and techniques from DEN 1006 with emphasis placed on the eight specialties in dentistry. P.R. Third quarter standing in the Dental Assisting curriculum.

DEN 1008 Dental Office Management (4–3) 5

Principles and procedures related to management of the dental office, including maintenance of inventories, ordering of supplies, financial records, clinical records, cavity classification and nomenclature, making appointments, telephone technique and establishing favorable patient relations. P.R. Third quarter standing in the Dental Assisting curriculum.

DEN 1009 Dental Office Practice I (0–9) 3

An introduction to practice in the dental office or dental clinic. Emphasis is on the role of assisting in the operatory in a variety of limited dental procedures. P.R. Third quarter standing in the Dental Assisting curriculum.

DEN 1010 Dental Office Practice II (0–24) 8

Practice in the dental office or dental clinic; assignments are rotated to encompass experience in office management, the dental laboratory and the operatory. Emphasis on chairside assisting in a variety of clinical procedures. P.R. Fourth quarter standing in Dental Assisting curriculum.

DEN 1011 Dental Assistant Seminar (2–0) 2

A study of personal responsibilities as a practitioner, including employee-employer relations, opportunities for continued development as a person and as a health worker, and evaluation of clinical experience. P.R. Fourth quarter standing in Dental Assisting curriculum.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

ENG 1103 Report Writing (3–0) 3

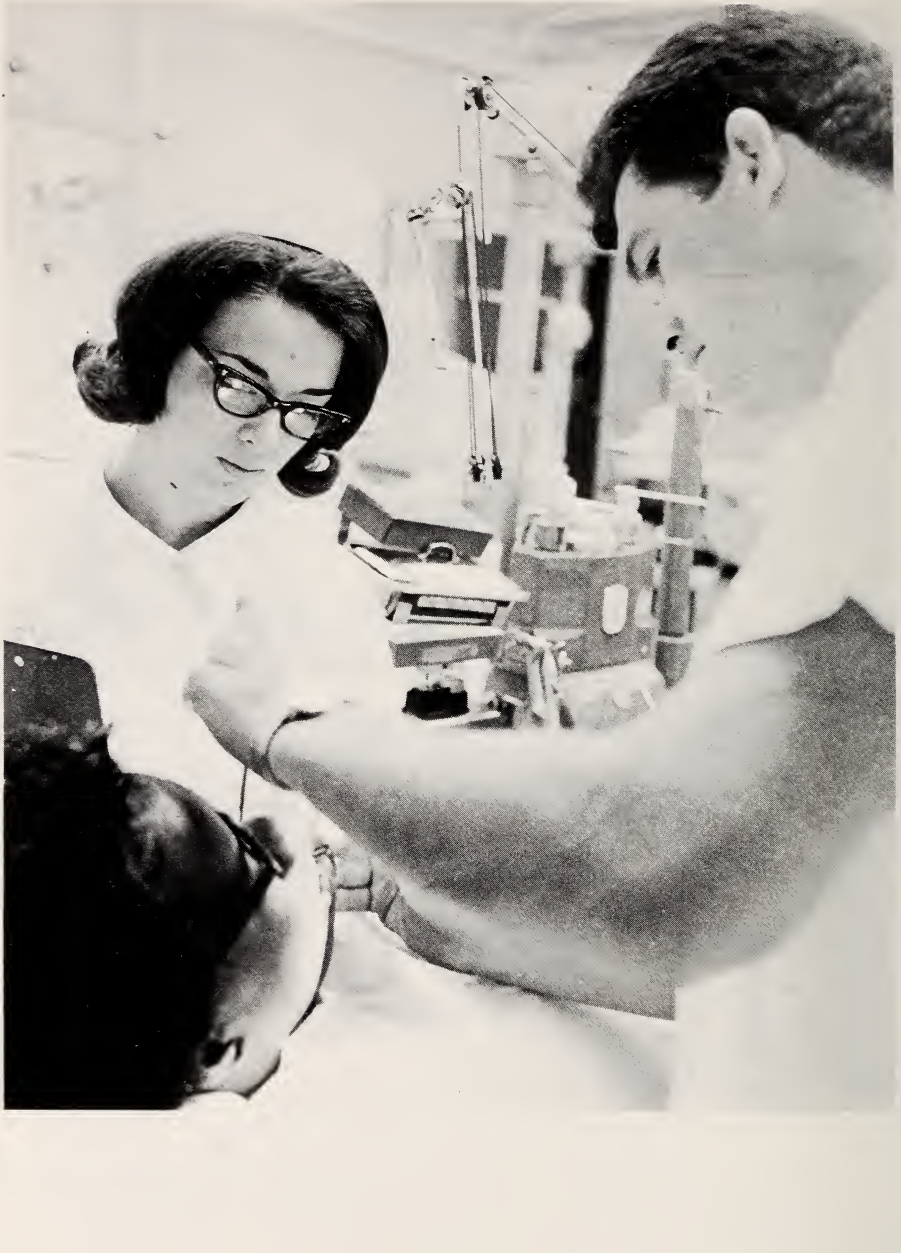
This course is designed to aid the student in the improvement of self-expression in business and technical composition. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation and spelling. The objective is to stimulate students to apply the basic principles of English grammar to their day-to-day situations in industry and social life.

ENG 1104 Speech (3–0) 3

A study of the mechanics of speech; adaptation of method to purpose in speaking; preparation of specific kinds of speeches; presentation of extemporaneous, impromptu, prepared and memorized material.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.



ELECTRICAL INSTALLATION

The rapid expansion of the national economy and the increasing development of new electrical products are providing a growing need for qualified people to install and maintain electrical equipment. By mid-1960 more than 350,000 were employed as either construction electricians or maintenance electricians. Between 5,000 and 10,000 additional tradesmen are required each year to replace those leaving the industry. It is expected that the total requirements for electrical tradesmen will reach 700,000 by 1970. The majority of the electrical tradesmen today are trained through apprenticeship or on-the-job training programs.

DESCRIPTION OF CURRICULUM

This curriculum will provide a training program in the fundamentals and practices involved in the electrical trades. A large portion of the program is devoted to laboratory and shop instruction which is designed to give the student practical knowledge and application experience in the fundamentals taught in class.

The graduate of the electrical trades program will be qualified to enter an electrical trade as an on-the-job trainee or apprentice, where he will assist in planning, layout, installation, check-out and maintenance of residential, commercial or industrial systems. He will have an understanding of the fundamentals of the National Electrical Code regulations as related to wiring installations, electrical circuits and the measurement of voltage, current, power and power factor of single and polyphase alternating circuits. He will have a basic knowledge of motors and motor control systems; industrial electronic control systems; business procedures, organization and practices; communicative skills and the necessary background to be able to advance through experience and additional training.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR ELECTRICAL INSTALLATION

Course Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER			
ELC 1124 Residential Wiring	5	9	8
DFT 1104 Blueprint Reading	3	0	3
MAT 1101 Shop Mathematics I	3	0	3
ENG 1102 Communication Skills	3	2	3
	14	11	17
SECOND QUARTER			
ELC 1125 Commercial and Industrial Wiring	3	12	7
PHY 1101 Shop Science I	2	2	3
DFT 1113 Blueprint Reading: Electrical	3	0	3
MAT 1102 Shop Mathematics II	3	0	3
	11	14	16
THIRD QUARTER			
ELC 1112 Direct and Alternating Currents	3	12	7
PSY 1101 Human Relations	2	0	2
PHY 1102 Shop Science II	2	2	3
MAT 1103 Shop Mathematics III	3	0	3
	10	14	15
FOURTH QUARTER			
ELC 1113 AC and DC Machines and Controls	5	12	9
BUS 1103 Shop Management	2	0	2
ELN 1118 Practical Industrial Electronics	3	6	5
	10	18	16

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

BUS 1103 Shop Management (2—0) 2

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations.

DFT 1104 Blueprint Reading (3—0) 3

The interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes.

DFT 1113 Blueprint Reading: Electrical (3—0) 3

Interpretation of schematics, diagrams and blueprints applicable to electrical installations with emphasis on electrical plans for domestic and commercial buildings. Sketching schematics, diagrams and electrical plans for electrical installations using appropriate symbols and notes according to the applicable codes will be a part of this course. P.R. DFT 1104.

ELC 1112 Direct and Alternating Currents (3—12) 7

A study of the electrical structure of matter and electron theory, the relationship between voltage, current and resistance in series, parallel and series-parallel circuits. An analysis of direct current circuits by Ohm's Law and Kirchhoff's Law. A study of the sources of direct current voltage potentials, Fundamental concepts of alternating current flow, reactance, impedance, phase angle, power and resonance. Analysis of alternating current circuits. P.R. MAT 1101 or equivalent.

ELC 1113 AC and DC Machines and Controls (5—12) 9

Provides fundamental concepts in single and polyphase alternating current circuits, voltages, currents, power measurements, transformers and motors. Instruction is given in the use of electrical test instruments in circuit analysis. An introduction is provided to the basic concepts of AC and DC machines and simple system controls used in small appliances such as thermostats and time or sequencing switches. P.R. ELC 1112, MAT 1103.

ELC 1124 Residential Wiring I (5—9) 8

Provides instruction and application in the fundamentals of blueprint reading and the planning, layout and installation of wiring in residential applications. National Electrical Code regulations for services, switchboards, lighting, fusing, wire sizes, branch circuits and conduits are studied in actual building mock-ups.

ELC 1125 Commercial and Industrial Wiring (3—12) 7

Layout, planning and installation of wiring systems in commercial and industrial complexes, with emphasis upon blueprint reading and symbols, the related National Electrical Codes and the application of the fundamentals to practical experience in wiring, conduit preparation and installation of simple systems. P.R. ELC 1124.

ELN 1118 Practical Industrial Electronics (3—6) 5

Basic theory, operating characteristics and application of vacuum tubes. An introduction to amplifiers using triodes, power supplies using diodes and other basic applications. P.R. ELC 1112.

ENG 1102 Communication Skills (3—2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

MAT 1101 Shop Mathematics I (3–0) 3

A review and application of operations with decimals and fractions, percentages, ratios and proportions. An introduction to algebra with emphasis on formulas.

MAT 1102 Shop Mathematics II (3–0) 3

The emphasis is placed on definitions and theorems in geometry. About 40 general theorems are demonstrated by the instructor. Specific application of each theorem to the solution of geometric shop problems is demonstrated. Concepts of linear measure, areas and volumes are taught. Geometric formulas are derived intuitively. P.R. MAT 1101.

MAT 1103 Shop Mathematics III (3–0) 3

The theory of right angle trigonometry. Topics include definitions of the six trigonometric ratios, use of trigonometric tables and procedures for visualizing parts of the right triangle on mechanical drawings. Applications of interest to the machinist and air conditioning and refrigeration student. Logarithms are taught as a computational aid only. P.R. MAT 1102.

PHY 1101 Shop Science I (2–2) 3

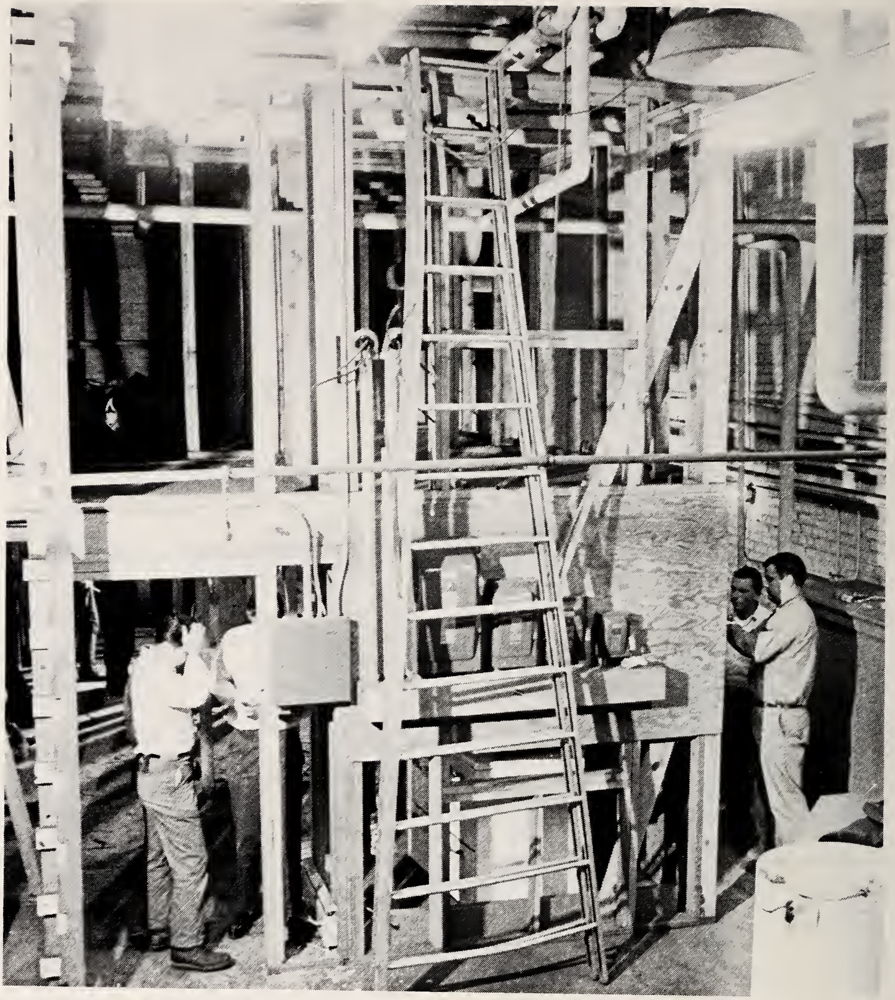
An introductory course in physics and its applications covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific applications of electrical energy also constitute major areas of study.

PHY 1102 Shop Science II (2–2) 3

Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 1101.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.



MACHINIST

The machinist is a key man in all industry engaged in manufacturing. The services of this highly-skilled craftsman are much in demand, and industrial development depends upon an ample supply of these trained people. To turn a common piece of metal into an intricate part meeting precise specifications, the skilled machinist must possess, along with a basic skill on all machines, a wide knowledge of shop practices and the working properties of various metals.

DESCRIPTION OF CURRICULUM

The Machinist curriculum at Central Piedmont Community College offers an opportunity for young men to gain the skill and knowledge needed to obtain an entry job in this interesting and rewarding occupation. By working on the job to gain experience beyond that learned in school, the ambitious person will find unlimited opportunities for advancement in this highly-skilled field of employment. Well-qualified instructors and excellent shop equipment can make this program a gateway to a very respected occupation. A graduate from this curriculum receives a diploma from the College.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR MACHINIST

Course Title		Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
MEC 1101	Machine Shop Theory and Practice I	3	12	7
DFT 1104	Blueprint Reading	3	0	3
MAT 1101	Shop Mathematics I	3	0	3
ENG 1102	Communication Skills	3	2	3
		12	14	16
SECOND QUARTER				
MEC 1102	Machine Shop Theory and Practice II	3	12	7
DFT 1105	Blueprint Reading and Drawing: Machinist I	3	0	3
MAT 1102	Shop Mathematics II	3	0	3
PHY 1101	Shop Science I	2	2	3
WLD 1101	Basic Gas Welding	0	3	1
		11	17	17
THIRD QUARTER				
MEC 1103	Machine Shop Theory and Practice III	2	12	6
DFT 1106	Blueprint Reading and Drawing: Machinist II	3	0	3
MAT 1103	Shop Mathematics III	3	0	3
PHY 1102	Shop Science II	2	2	3
MEC 1115	Heat Treatment of Metals I	1	3	2
		11	17	17
FOURTH QUARTER				
MEC 1104	Machine Shop Theory and Practice IV	2	15	7
MAT 1104	Shop Mathematics IV	3	0	3
MEC 1116	Heat Treatment of Metals II	1	3	2
PSY 1101	Human Relations	2	0	2
		8	18	14

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

DFT 1104 Blueprint Reading (3—0) 3

The interpretation and reading of blueprints. Development of ability to read and Interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes.

DFT 1105 Blueprint Reading and Drawing: Machinist I (3—0) 3

This course provides an introduction to the interpretation and reading of machine blueprints. It also introduces the basic principles of mechanical drawing, including both sketching and the use of drawing instruments, as applied to machine parts.

DFT 1106 Blueprint Reading and Drawing: Machinist II (3—0) 3

A continuation of DFT 1105. Attention is given to the interpretation and reading of more complicated blueprints. Practice is provided in the production of more complicated machine industrial drawings by both sketching and the use of drawing instruments.

ENG 1102 Communication Skills (3—2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

MAT 1101 Shop Mathematics I (3—0) 3

A review and application of operations with decimals and fractions, percentages, ratios and proportions. An introduction to algebra with emphasis on formulas.

MAT 1102 Shop Mathematics II (3—0) 3

The emphasis is placed on definitions and theorems in geometry. About 40 general theorems are demonstrated by the instructor. Specific application of each theorem to the solution of geometric shop problems is demonstrated. Concepts of linear measure, areas and volumes are taught. Geometric formulas are derived intuitively. P.R. MAT 1101.

MAT 1103 Shop Mathematics III (3—0) 3

The theory of right triangle trigonometry. Topics include definitions of the six trigonometric ratios, use of trigonometric tables and procedures for visualizing parts of the right triangle on mechanical drawings. Applications of interest to the machinist and air conditioning and refrigeration student. Logarithms are taught as a computational aid only. P.R. MAT 1102.

MAT 1104 Shop Mathematics IV (3—0) 3

Theory and practice in measurement of screw threads, gear ratio and simple indexing. Fundamental applications of compound angles and continued fractions to shop problems. Math problems taken from industry are incorporated for solution in this course. P.R. MAT 1103.

MEC 1101 Machine Shop Theory and Practice I (3—12) 7

The identification, care and use of basic hand tools and precision measuring instruments used in the machinist trade. Elementary layout procedures and processes of lathe, drill press and grinding (off-hand) are introduced. Initial stressing of shop safety and desirable work habits.

MEC 1102 Machine Shop Theory and Practice II (3—12) 7

Advanced operations with layout tools and procedures, power sawing, drill press, surface grinder, milling machine and shaper. The student is introduced to the basic operations of the cylindrical grinder and is given projects encompassing all the operations, tools and procedures used thus far. P.R. MEC 1101.

MEC 1103 Machine Shop Theory and Practice III (2–12) 6

Advanced work on the engine lathe, grinder, milling machine and shaper. An introduction to basic indexing, cutting and measuring spur gears. The student is also introduced to exercises on the turret lathe and the tool and cutter grinder. P.R. MEC 1102.

MEC 1104 Machine Shop Theory and Practice IV (2–15) 7

The student participates in the development of class projects using previously learned procedures in planning, blueprint reading, machine operations, final assembly and inspection. Special advanced projects are given to those students who have demonstrated marked ability in the course. P.R. MEC 1103.

MEC 1115 Heat Treatment of Metals I (1–3) 2

The investigation of the properties of ferrous metals and tests to determine their uses. Some chemical metallurgy is included to provide background for the understanding of the physical changes and the causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloys of special steel, classification of steels and cast iron are topics for study.

MEC 1116 Heat Treatment of Metals II (1–3) 2

A continuation of the study of physical metallurgy. The non-ferrous metals, bearing metals (brasses, bronze, lead), light metals (aluminum and magnesium) and copper and its alloys are studied. Powder metallurgy, titanium, zirconium, indium and vanadium are included in the course. P.R. MEC 1115.

PHY 1101 Shop Science I (2–2) 3

An introductory course in physics and its applications covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific applications of electrical energy also constitute major areas of study.

PHY 1102 Shop Science II (2–2) 3

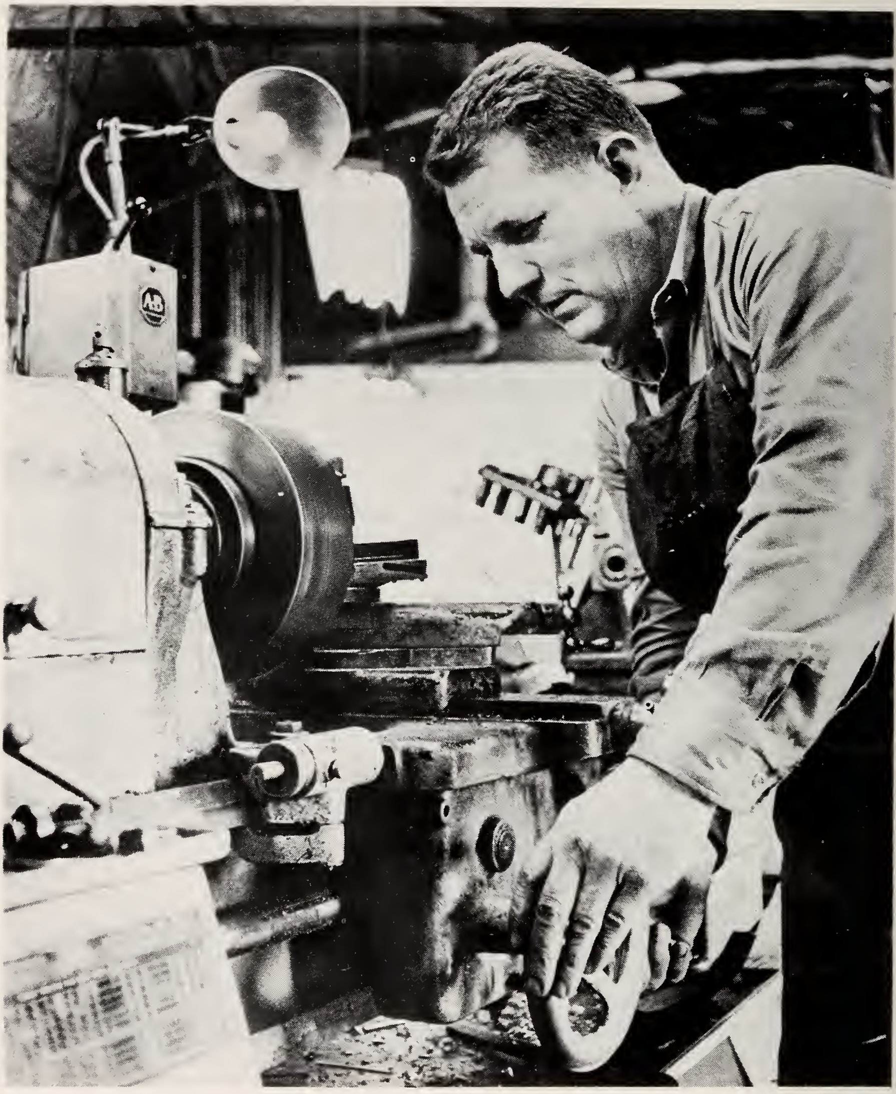
Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 1101.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

WLD 1101 Basic Gas Welding (0–3) 1

Welding demonstrations by the instructor and practice by students in the oxy-acetylene welding shop. Safe and correct methods of assembling and operating the welding equipment are emphasized. Practice is given in surface welding, bronze welding, silver-soldering and flame cutting methods applicable to mechanical repair work.



MEDICAL OFFICE ASSISTING

The medical office assistant is a person trained to assist the licensed physician in his office or in a hospital out-patient department. The demands on the time of the physician have made the career of the medical office assistant one of the most rapidly growing and most important fields of work in recent years. The duties of the medical office assistant include: preparing patients for the physician's examination, cleaning and sterilizing equipment and supplies, collecting specimens, performing simple laboratory tests and carrying out the business-office activities of the doctor.

DESCRIPTION OF CURRICULUM

A diploma will be awarded to students who satisfactorily complete the one year Medical Office Assisting curriculum. In addition to classroom study, each student will be provided with "on the job" practice under the direct supervision of a doctor and a medical assistant. These experiences are planned and coordinated by a member of the College faculty.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR MEDICAL OFFICE ASSISTING

Course		Title	Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER					
MED	1102	Orientation to Medical Assisting	2	0	2
ENG	1102	Communication Skills	3	2	3
PSY	1101	Human Relations	2	0	2
T-BUS	113	Medical Terminology and Vocabulary I	1	2	2
SCI	1101	Basic Health Science	4	3	5
			12	7	14
SECOND QUARTER					
T-BUS	114	Medical Terminology and Vocabulary II	1	2	2
T-BUS	218	Medical Ethics and Law	3	0	3
ENG	1103	Report Writing	3	0	3
BUS	1110	Accounting	5	2	6
			12	4	14
THIRD QUARTER					
T-BUS	214	Secretarial Procedures	3	0	3
MED	1117	Office Procedures	3	6	5
MED	1118	Laboratory Procedures	2	6	4
BUS	1102	Typing	2	3	3
			10	15	15
FOURTH QUARTER					
MED	1119	Medical Office Practice	0	24	8
MED	1120	Medical Assistant Seminar	4	0	4
			4	24	12

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course are listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

BUS 1102 Typing (2–3) 3

This course is required of all students who have had no previous typing. The touch system is taught. The proper manipulation of the keyboard and the operation of the machine are given special attention.

BUS 1110 Accounting (5–2) 6

The principles, techniques and tools of accounting are studied. Emphasis is placed upon understanding the mechanics of accounting — collecting, summarizing, analyzing and reporting information about service and mercantile enterprises. Opportunity is given for practical application of the principles learned.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

ENG 1103 Report Writing (3–0) 3

This course is designed to aid the student in the improvement of self-expression in business and technical composition. The approach is functional with emphasis on grammar, diction, sentence structure, punctuation and spelling. The objective is to stimulate students to apply the basic principles of English grammar in their day-to-day situations in industry and life.

MED 1102 Orientation to Medical Office Assisting (2–0) 2

This course is designed to help the student in understanding the role of the medical office assistant. Emphasis is placed on the development of appreciations and attitudes that will assist in the establishment of realistic goals in personal and vocational development.

MED 1117 Office Procedures (3–6) 5

This course is designed to teach the skills needed by the medical office assistant in assisting the doctor in the examination room. The course of study includes proper physical and psychological preparation of the patient for the physician's examination and proper care of the supplies and instruments used.

MED 1118 Laboratory Procedures (2–6) 4

This course is a study of the basic knowledge needed to become familiar with the laboratory tests most commonly performed in the doctor's office. Emphasis is placed on patient preparation for diagnostic procedures. The ability to obtain and collect specimens and carry out routine laboratory examinations such as urinalysis and blood count is developed.

MED 1119 Medical Office Practice (0–24) 8

This course is a practicum in medical office assisting. The student is assigned to a physician's office, clinic or outpatient department. Assignments are rotated to encompass experience in office management, examination room procedures and laboratory procedures. C.R. MED 1120; P.R. Fourth quarter standing.

MED 1120 Medical Office Assistant Seminar (4–0) 4

A study of the personal and vocational responsibilities of a practitioner in the field of medical office assisting. Discussion of problems encountered during experience in Medical Office Practice (MED 1119) offers an opportunity for reinforcement of learning. C.R. MED 1119; P.R. Fourth quarter standing.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

SCI 1101 Basic Health Science (4–3) 5

This course is designed to give the student an understanding of basic science principles and their relationships to health. The course includes study of the structure and function of the human body, principles of food and nutrition and selected principles of microbiology.

T-BUS 113 Medical Terminology and Vocabulary I (1–2) 2

A study of the structure of medical words and terms. Emphasis is placed on spelling and defining commonly used prefixes, suffixes, root words and their combining forms.

T-BUS 114 Medical Terminology and Vocabulary II (1–2) 2

A continuation of T-BUS 113 with greater emphasis placed on the understanding of terminology and its use in the medical office. P.R. T-BUS 113.

T-BUS 214 Secretarial Procedures (3–0) 3

This course is designed to acquaint the student with the responsibilities encountered by a secretary during the work day. These responsibilities include the following: receptionist duties, handling the mail, telephone techniques, travel information, telegrams, office records, purchasing of supplies, office organization and insurance claims.

T-BUS 218 Medical Ethics and Law (3–0) 3

Principles of office conduct, ethical responsibility in regard to information acquired, and the obligation and responsibilities of the medical office assistant are studied. Laws governing medical practice are included.

PRACTICAL NURSING

The demand for licensed practical nurses far exceeds the supply of available trained people. Hospitals, clinics, nursing homes, doctors' offices and industries need licensed practical nurses.

The graduate licensed practical nurse is an important member of the health team. In addition to the nursing care she is able to give to convalescing patients and to those with chronic or handicapping conditions, she is also equipped to assist the registered nurse in providing care for the more seriously ill and injured. Both men and women find opportunities for service as licensed practical nurses.

DESCRIPTION OF CURRICULUM

The Practical Nursing curriculum at Central Piedmont Community College provides the opportunity for students to gain the knowledge, appreciations and skills which are needed by an effective practitioner of practical nursing.

The course of study is one year (four quarters) in length and provides both classroom and supervised hospital practice.

Opportunity is provided for the study of nursing care of patients of all age groups in medical-surgical nursing, care of the sick child, and care of the mother and newborn infant.

Upon completion of the curriculum, the graduate is awarded a diploma by the College and is qualified to take the licensing examination given by the North Carolina Board of Nursing, Raleigh, North Carolina.

SUGGESTED SEQUENCE OF REQUIRED COURSES FOR PRACTICAL NURSING

Course Title		Hours per Week Class	Hours per Week Lab.	Quarter Hours Credit
FIRST QUARTER				
ENG 1102	Communication Skills	3	2	3
PSY 1101	Human Relations	2	0	2
SCI 1101	Basic Health Science	4	3	5
NUR 1102	Orientation to Vocational Relationships	2	0	2
NUR 1103	Introduction to Patient Care	6	6	8
		17	11	20
SECOND QUARTER				
NUR 1104	Basic Principles of Drug Administration	4	0	4
NUR 1105	Care of Patients with Medical-Surgical Conditions I	8	24	16
		12	24	20
THIRD QUARTER				
NUR 1106	Care of Mothers and Newborn Infants	4	9	7
NUR 1107	Care of Patients with Medical-Surgical Conditions II	8	15	13
		12	24	20
FOURTH QUARTER				
NUR 1108	Care of Infants and Children	4	9	7
NUR 1109	Vocational Relationships	2	0	2
NUR 1110	Care of the Seriously Ill and Injured	6	15	11
		12	24	20

COURSE DESCRIPTIONS

In each course description there is listed the course number followed by the course title. The number of lecture and laboratory hours for the course is listed in parentheses following the course title. The last number listed is the number of quarter hours of credit for the course. The letters P.R. indicate the prerequisite for the course. The letters C.R. indicate a corequisite. Course descriptions are listed in alphabetical order.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

NUR 1102 Orientation to Vocational Relationships (2–0) 2

This course is designed to assist the student in understanding herself, her vocation and the individual needs of her patients. Emphasis is placed on the development of appreciations and attitudes which will assist the student in understanding her role as a potential worker in nursing, in establishing effective relationships with her co-workers and patients, and in establishing realistic goals for herself in her personal and vocational development.

NUR 1103 Introduction to Patient Care (6–6) 8

This course is planned to provide the opportunity for students to gain a knowledge of the principles which are basic to effective and safe nursing care. Emphasis is placed on the development of the essential skills for the performance of those nursing measures that normally are the responsibility of the licensed practical nurse. Lecture and planned class laboratory experience are followed by related clinical experience.

NUR 1104 Basic Principles of Drug Administration (4–0) 4

The basic concepts of drug therapy and an appreciation of the responsibilities and the necessary limitations of the Licensed Practical Nurse in the administration of medications are emphasized.

NUR 1105 Care of Patients with Medical-Surgical Conditions I (8–24) 16

This course is designed to provide the student the opportunity to gain an understanding of the nursing needs of patients who have various medical-surgical conditions and to develop further understanding of the common drugs and therapeutic measures of concern to the practical nurse. Lecture and class laboratory provide the background for selected clinical experiences.

NUR 1106 Care of Mothers and Newborn Infants (4–9) 7

This course is designed to provide opportunities for students to acquire the knowledge, understanding and skill needed for rendering safe and effective nursing care to the maternity patient and newborn infant. Classroom instruction provides the background essential for planned clinical experience centered around analysis of nursing needs and formulation of a nursing care plan to meet individual patient needs.

NUR 1107 Care of Patients with Medical-Surgical Conditions II (8–15) 13

A continuation of NUR 1105.

NUR 1108 Care of Infants and Children (4–9) 7

This course is designed to provide opportunities for students to acquire the knowledge, understanding and skills needed for rendering safe and effective nursing care of infants and children. Classroom instruction provides the background essential for planned clinical experiences centered around analysis of nursing needs and formulation of a nursing care plan to meet individual patient needs.

NUR 1109 Vocational Relationships (2–0) 2

This course is designed to orient the student to her role as a licensed practical nurse. It includes the study of opportunities in practical nursing and the obligations and responsibilities of the licensed practical nurse as a person, a worker and a citizen. Relationships with other members of the health team to more fully achieve the goals of nursing are emphasized throughout the course.

NUR 1110 Care of the Seriously Ill and Injured (6—15) 11

This course is designed to prepare the student for participation in the care of seriously ill patients and for development of further skills in the care of selected patients. Emphasis is placed on the assisting role of the licensed practical nurse. Classroom instruction provides the background for planned clinical experiences.

PSY 1101 Human Relations (2—0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

SCI 1101 Basic Health Science (4—3) 5

This course is designed to give the beginning student an understanding of basic science principles and their relationships to health. This course includes study of the structure and function of the human body, principles of foods and nutrition and selected principles of microbiology.

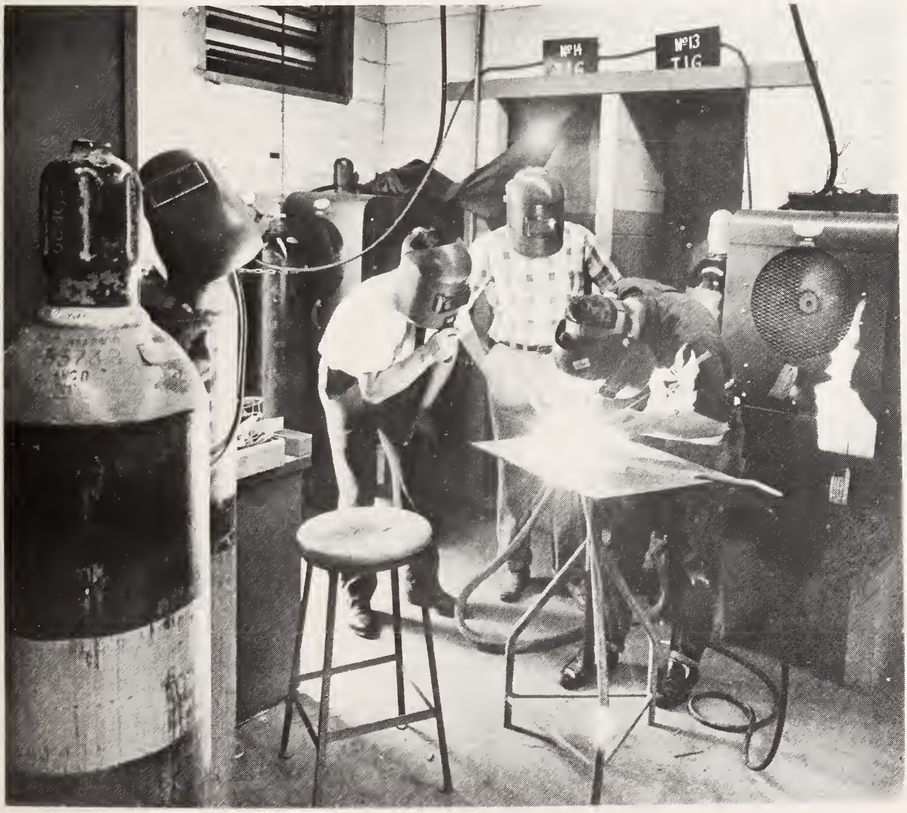
WELDING

Many of the parts used in missiles, automobiles, airplanes, refrigerators and thousands of other products are joined by a widely-used process known as welding. Welders join metals by applying intense heat and sometimes pressure to metals to melt the edges to form a permanent bond. Of the more than thirty-five different ways of welding metals, electric arc, oxy-acetylene and resistance welding are the three most important.

Welding provides the opportunity to see the world and make good money at the same time. Skilled welders work on bridges, buildings, dams and other construction projects around the globe. A well-trained welder can travel if he wishes, or he can obtain one of the many jobs now available in Charlotte for a person skilled in this trade.

DESCRIPTION OF CURRICULUM

The curriculum at Central Piedmont Community College provides the opportunity for students to develop the skills necessary in the operation of a variety of types of welding equipment. Other courses such as metals, shop math and blueprint reading play important parts in developing a first-class welder. A graduate from this curriculum will receive a diploma from the College.



SUGGESTED SEQUENCE OF REQUIRED COURSES FOR WELDING

Course Title	Hours per Week Class	Lab.	Quarter Hours Credit
FIRST QUARTER			
WLD 1120 Oxyacetylene Welding and Cutting	3	12	7
MAT 1101 Shop Mathematics I	3	0	3
DFT 1104 Blueprint Reading	3	0	3
ENG 1102 Communication Skills	3	2	3
	12	14	16
SECOND QUARTER			
WLD 1121 Arc Welding	3	12	7
MAT 1102 Shop Mathematics II	3	0	3
DFT 1117 Blueprint Reading and Sketching	3	2	4
PHY 1101 Shop Science I	2	2	3
	11	16	17
THIRD QUARTER			
WLD 1124 Pipe Welding	1	3	2
WLD 1123 Inert Gas Welding	3	12	7
MEC 1115 Heat Treatment of Metals I	1	3	2
PHY 1102 Shop Science II	2	2	3
	7	20	14
FOURTH QUARTER			
WLD 1122 Commercial and Industrial Practice	2	9	5
WLD 1125 Certification Practice	2	6	4
MEC 1116 Heat Treatment of Metals II	1	3	2
PSY 1101 Human Relations	2	0	2
BUS 1103 Shop Management	2	0	2
	9	18	15

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BUS 1103 Shop Management (2–0) 2

An introduction to the business world, problems of small business operation, basic business law, business forms and records, financial problems, ordering and inventorying, layout of equipment and offices, methods of improving business and employer-employee relations.

DFT 1104 Blueprint Reading (3–0) 3

The interpretation and reading of blueprints. Development of ability to read and interpret blueprints, charts, instruction and service manuals and wiring diagrams. Information on the basic principles of lines, views, dimensioning procedures and notes.

DFT 1117 Blueprint Reading and Sketching (3–2) 4

A thorough study is made of trade drawings in which welding procedures are indicated. Emphasis is given to the interpretation, use and application of welding symbols, abbreviations and specifications.

ENG 1102 Communication Skills (3–2) 3

The course deals with the development of an ability to communicate effectively through the medium of good language usage in speaking and writing. Emphasis is placed upon the efficient organization and presentation of thoughts related to job-connected problems.

MAT 1101 Shop Mathematics I (3–0) 3

A review and application of operations with decimals and fractions, percentages, ratios and proportions. An introduction to algebra with emphasis on formulas.

MAT 1102 Shop Mathematics II (3–0) 3

The emphasis is placed on definitions and theorems in geometry. About 40 general theorems are demonstrated by the instructor. Specific application of each theorem to the solution of geometric shop problems is demonstrated. Concepts of linear measure areas and volumes are taught. Geometric formulas are derived intuitively. P.R. MAT 1101.

MEC 1115 Heat Treatment of Metals I (1–3) 2

The investigation of the properties of ferrous metals and tests to determine their uses. Some chemical metallurgy is included to provide background for the understanding of the physical changes and the causes of these changes in metals. Physical metallurgy of ferrous metals, producing iron and steel, theory of alloys, shaping and forming, heat treatments for steel, surface treatments, alloys of special steel, classification of steels and cast iron are topics for study.

MEC 1116 Heat Treatment of Metals II (1–3) 2

A continuation of the study of physical metallurgy. The non-ferrous metals, bearing metals (brasses, bronze, lead), light metals (aluminum and magnesium) and copper and its alloys are studied. Powder metallurgy, titanium, zirconium, indium and vanadium are included in the course. P.R. MEC 1115.

PHY 1101 Shop Science I (2–2) 3

An introductory course in physics and its applications, covering systems of measurement and properties of solids, liquids and gases. Much emphasis is placed upon the principles of electricity including electron theory, magnetism and electro-magnetism. The production, transmission, distribution, measurement and specific applications of electrical energy also constitute major areas of study.

PHY 1102 Shop Science II (2–2) 3

Principles of force, motion, work, energy, power and mechanisms' mechanical advantage are treated extensively. The production and transmission of heat and its conversion into work are covered. Heat removal (refrigeration) is also introduced. P.R. PHY 1101.

PSY 1101 Human Relations (2–0) 2

The development of an understanding of relationships to other persons through some of the basic principles of human psychology. The problems of the individual and his work situation are studied in relation to the established organization of modern business and industry and in relation to governmental practices and labor organizations, with special emphasis on the operating responsibilities of good management.

WLD 1120 Oxyacetylene Welding and Cutting (3–12) 7

An introduction to the history of oxyacetylene welding, the principles of welding and cutting, nomenclature of the equipment and assembly of units are the major topics of this course. Welding procedures such as practice of puddling and carrying the puddle, running flat beads, butt welding in the flat, vertical and overhead positions, brazing and hard and soft soldering are studied. Safety procedures in the use of tools and equipment are stressed. Students perform mechanical testing and inspection to determine quality of the welds.

WLD 1121 Arc Welding (3–12) 7

A study of the operation of AC transformer and DC motor generator arc welding sets. Studies are made of welding heats, polarities and electrodes for use in joining various metal alloys by the arc welding process. After the student is capable of running beads, butt and fillet welds in all positions are made and tested so that the student may detect his weaknesses in welding. Safety procedures are emphasized throughout the course.

WLD 1122 Commercial and Industrial Practices (2–9) 5

The major objective of the course is to build skills through practices in simulated industrial processes and techniques including sketching and laying out on paper the size and shape description, listing the procedure steps necessary to build the product, and following these directions to build the product. Emphasis is placed on maintenance, repairing worn or broken parts by special welding applications, field welding and nondestructive tests and inspection. P.R. WLD 1120, WLD 1121.

WLD 1123 Inert Gas Welding (3–12) 7

An introduction to and practical operations in the use of inert-gas-shield arc welding. A study is made of the equipment, operation, safety and practice in the various positions. A thorough study of such topics as principles of operation, shielding, gases, filler rods, process variations and applications, manual and automatic welding. P.R. WLD 1120, WLD 1121.

WLD 1124 Pipe Welding (1–3) 2

This course is designed to provide practice in the welding of pressure piping in the horizontal, vertical and horizontal fixed position using shielded metal arc welding processes according to Sections VIII and IX of the ASME Code. P.R. WLD 1121.

WLD 1125 Certification Practice (2–6) 4

This course involves practice in welding the various materials to meet certification standards. The student uses various tests including guided bend and tensile strength tests to check the quality of his work. Emphasis is placed on attaining skill in producing quality welds. P.R. WLD 1123, WLD 1124.

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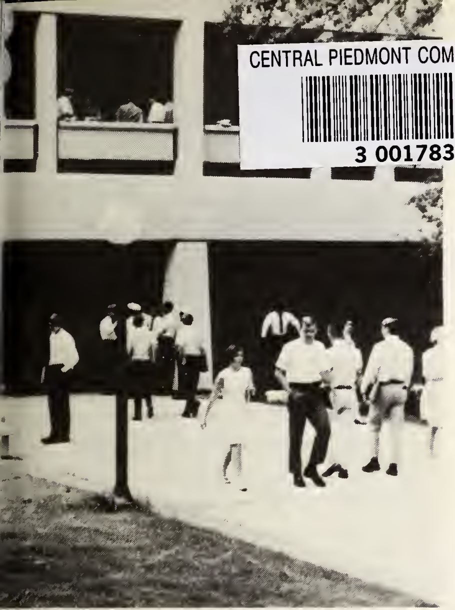

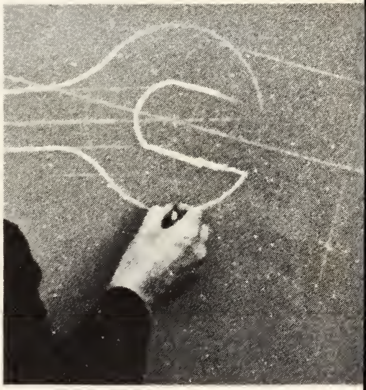

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